A REVIEW OF THE FCC's SPECTRUM POLICIES FOR THE 21st CENTURY AND H.R. 4758, THE SPECTRUM RESOURCE ASSURANCE ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS, TRADE, AND CONSUMER PROTECTION

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CONTENTS

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WEDNESDAY, JULY 19, 2000

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON TELECOMMUNICATIONS,
TRADE, AND CONSUMER PROTECTION,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:05 a.m. in room 2322, Rayburn House Office Building, Hon. W.J. "Billy" Tauzin (chairman) presiding.

Members present: Representatives Tauzin, Oxley, Stearns, Cox, Largent, Shimkus, Pickering, Markey, Boucher, Rush, Wynn, Luther, Sawyer, Green, McCarthy, and Dingell (ex officio).

Also present: Representative Bilbray.

Staff present: Mike O'Rielly, majority staff; Cliff Riccio, legislative analyst; and Andy Levin, minority counsel.

Mr. TAUZIN. The hearing will come to order.

We want to ask the first panel if they would kindly take their seats this morning. Let me first welcome you all to this long-awaited spectrum management policy hearing, which I like to refer to as the U.S. spectrum policy blueprint for the 21st Century.

We will hear today from two panels of distinguished experts, one representing the government and the public sector and one representing the private sector.

Our panelists, I am assured, are prepared to comment on a wide array of spectrum issues, ranging from those that have global important to those that are quite local in scope.

Nonetheless, all of the issues should and will be addressed together today because they essentially raise the same policy consideration, that is, how do we reconstruct our domestic and international spectrum management policies to ensure that our commercial and that our public spectrums, resources that frankly grow more scarce every day, are allocated as efficaciously as possible.

On the domestic front, of course, Congressman Gutknecht and Nethercutt are going to address today the FCC's unfortunate treatment of certain long-standing licenses issued to operate on the 1427 to 1432 MHz band. I want to applaud them for their leadership on this issue.

I have some questions regarding this situation and I have a few questions today for the FCC about its rules prohibiting the

warehousing of KA band spectrum slots that may be hindering the broader deployment of broadband services to rural and underserved areas of the United States.

This is also a legislative hearing on H.R. 4758, which is a bill introduced by Cliff Stearns which lifts the FCC's artificially imposed spectrum caps for future auctions.

I am an original co-sponsor of this legislation and I believe it could provide some relief in the immediate future in terms of helping our American spectrum managers find available bands for the rural and Third Generation wireless services.

I might add an area of communications development where the United States, I believe, woefully lags the rest of the world.

Also, the upcoming 700-MHz auction is quickly approaching. It appears that there have been many complications surrounding the band-clearing plan for Channels 60 to 69.

In light of the complicated issues surrounding the transition to digital television, it is still very much in question whether broadcasters providing analog services within Channel 60 to 69 today will be able to vacate these channels even by the year 2006.

We are going to have hearings very shortly on the issue of the digital transition. There are grave concerns that we are well behind in that effort that was scheduled to be completed by the year 2006.

Surely Congress never intended that viewer's analog signals could be taken away from them before a digital signal is available in most of our markets.

Consequently, there are so many issues that broadcasters, old companies, design licenses in the 700 MHz band need to work out before you rush to auction off the system.

Moreover, it doesn't make a whole lot of sense to me to issue licenses now that may not vest any rights of possession to the licensees for another 6 or more years. As I said before, there is more to an auction than raising revenue for the Federal Government.

I am inclined to agree with my colleague in the Senate, Senator Domenici of New Mexico, who has indicated that it may be more prudent to delay the 700-MHz auction for purposes of clarifying the uses of the spectrum.

I simply do not believe that going forward with such an auction to meet the September 30 target date for collection of revenue, which I am now more convinced our government doesn't obviously need would be in the public interest.

On the international front, the scheduling of this auction management hearing could not come at a more opportune time with the recent June 2 conclusion of the International Telecommunications World Radio Conference.

At the Global Spectrum Summit held in Istanbul, spectrum managers from all over the world formulated future spectrum allocation plans that will have a very dramatic impact on the U.S. economy and the Congress should therefore thoroughly review the impact of these plans.

Discussions on WRC-2000, which included over 160 nations, verify the need for additional spectrum for international mobile telecommunications and reaffirm the need to identify potential bands worldwide to accommodate the growing demand for Third Generation services, commonly referred to as 3-G.

Third Generation wireless services include enhanced voice, video, Internet and other broadband capabilities using wireless spectrum.

While the U.S. is just beginning to study potential spectrum availability for 3-G services, much of the world, especially Europe and Asia, is rapidly moving forward with licensing, deployment of these 3-G capabilities.

International carriers are capturing a greater share of the marketplace by providing advanced mobile services. In the U.S. it has become painfully evident that there is no long-term spectrum management plan for deployment of 3-G and advanced services.

Personally, I am concerned that we have fallen well behind Asia and Europe in the deployment of these new wireless technologies.

Some have suggested that the rest of the world has recognized the U.S. dominance in the e-commerce arena and the only way the rest of the world can counter is by leap-frogging the U.S. technology by putting low-cost, handheld Internet computing devises in the possession of their entrepreneurs.

We know there is no simple solution. The wireless spectrum allocation decisions are inter-dependent upon spectrum uses.

I hope we can learn more about the requisite studies and reallocation process that need to occur if we are going to implement 3-G in the U.S. in the very near future.

While telecommunications has been a substantial contributor to the high tech revolution that has kept our economy growing, wireless telecommunications is a vital part of the economy.

The wireless industry has demonstrated that competition has driven the provision of new services and falling prices for American consumers.

It is essential for the continued expansion of the U.S. economy that a well-planned, well-perceived and well-conceived spectrum management policy become the blueprint to fulfill U.S. spectrum needs.

Now is the time to begin the process specifying how and when Third Generation can be made domestically available on a going-forward basis.

Failure to keep pace with world allocation and failure to harmonize U.S. spectrum allocation with the rest of the world will no doubt harm U.S. consumers, U.S. manufacturers and U.S. service providers.

So this is a very important hearing and we look forward to the testimony of both of these very important panels.

The Chair now yields to my friend, the ranking minority member from Massachusetts, Mr. Markey, for an opening statement.

Mr. MARKEY. Thank you, Mr. Chairman, very much. I would like to commend you for calling this hearing this morning on various spectrum related issues, including legislation that proposes to remove the so-called spectrum cap.

As we know, spectrum at any given time is a finite resource. We also know that every company currently utilizing the spectrum or hoping to harness the airwaves in the future for their new gadget, regardless of its particular application, all have one thing in common: They all want more spectrum.

Because we obviously cannot accede to the requests of all companies and all industries and all technologies at the same time, we are forced to ration use of the spectrum.

The FCC is tasked, in coordination with NTIA to manage use of spectrum resources and to allocate and assign airwave frequencies so that we derive the maximum benefit for the American public. This is not an easy job.

Yet, NTIA and the FCC have performed this job in a way that today provides Americans with the most competitive, most innovative wireless markets in the world.

Without question, wireless consumers increasingly enjoy the benefits of a concerted policy articulated by both the Congress and the FCC to ensure a competitive marketplace for wireless goods and services.

Today, more wireless consumers have five or more wireless carriers to choose from. The result of adding competition to the original cellular duopoly has been a dramatic lowering of prices and an acceleration of the introduction of innovative pricing plans and wireless products.

Our success in adding competition has its roots in the FCC's eligibility rules for obtaining new wireless licenses and in the spectrum cap, which is designed to prevent licensees from obtaining an unhealthy consolidation of the public spectrum resources in individual markets.

In short, the spectrum cap set today at 45 MHz in major markets and 55 MHz in rural markets ensures that there will be at least four competitors in each area.

Given the palpable benefits that the spectrum cap policy has achieved for American consumers, I do not believe it is wise at this time to remove it.

New spectrum sharing technologies or sophisticated compression techniques will allow companies to wring more efficiency out of what they currently have.

In addition, increased investments in infrastructure such as additional cell sites can help alleviate congestion in isolated instances.

On their existing frequencies, wireless companies will be able to roll out new web-based services, indeed many are doing so today. Retention of the spectrum cap will permit such advances while simultaneously maintaining the competitive gains we have thus far painstakingly secured for consumers.

Moreover, in the aftermath of the recent World Radio Conference in Istanbul the United States must now full assess the frequencies identified at Istanbul in order to ascertain whether additional spectrum could or should be made available for so-called 3-G services.

If such additional spectrum is allocated for 3-G services in the future, then it would be appropriate at that time to examine adjusting the spectrum cap.

I strongly believe, however, that any such future adjustments in the cap should only be made if we retain the competitive marketplace structure that exists today.

Again, I want to thank you, Mr. Chairman, for calling this hearing. I look forward to hearing from our witnesses.

Mr. TAUZIN. I thank my friend.

The Chair is now pleased to recognize the author of the very wise legislation that is before this subcommittee today, my friend from Florida, Mr. Cliff Stearns.

Mr. STEARNS. I also want to commend you for this hearing and also for your cogent opening statement on my legislation.

I want to thank the folks that have co-sponsored my bill, particularly yourself, Mr. Chairman, Mr. Oxley, Mr. Deal, Mr. Ehrlich and of course, Mr. Rogan and Mr. Boucher.

I look forward to the witnesses.

With the conclusion of the International Telecommunication Union's World Radio Conference recent assembly and new rounds of spectrum auctions around the corner, this is a very timely and important hearing into over spectrum policies and management issues.

Mr. Chairman, the wireless industry is perhaps the most dynamic sector of telecommunications today. It is an exciting time. Practically every day I read or hear about some wireless innovation that will make our lives a little easier, more exciting.

But as everyone knows, the spectrum is getting more scarce and most costly than it was a few years ago. One of the pressing goals of the World Radio Conference was to allocate spectrum for Third Generation wireless, 3-G, and establish international spectrum use, thereby reducing disputes over both domestic and international use of spectrum.

However, the administration may have missed the opportunity to harmonize spectrum uses to assure that as wireless innovators are given access to spectrum, such access does not frustrate existing users, particularly when it comes to public safety and national security.

Therefore, I am interested to hear Assistant Secretary Rohde's testimony and what plans the administration has to assure efficient spectrum use while allowing innovation to flourish.

While Secretary Rohde and Ambassador Shutler are to be commended for their tireless efforts in furthering the United States spectrum needs, the Federal Communications Commission Wireless Bureau deserves an equal amount of credit.

While Congress deliberates streamlining and reforming the FCC, the Wireless Bureau under the direction of the Bureau Chief, Tom Sugrue, is to be commended for reducing by 99 percent the number of items that have been pending at the Bureau for a year or more.

This illustrates the Wireless Bureau is capable and can be trusted to properly execute one of its core functions.

However, Mr. Chairman, I disagree with the policies and direction of the Commission on spectrum management, particularly spectrum limits and auctions.

While the FCC had the foresight not to impose spectrum caps on the upcoming 700-MHz auction of Channels 60 through 69, I do have some concerns that rushing to start the auctions in September will result in a spectrum train wreck waiting to happen, ultimately causing more harm than good to the wireless marketplace.

For starters, spectrum to be auctioned may not even be available by 2006 and there is no clear process to determine how much or when the incumbent broadcasters will clear the spectrum.

Additionally, the FCC even lacks the authority to ensure the incumbent broadcasters vacate the spectrum in a timely manner.

This uncertainty by the bidders will surely mean the U.S. Treasury and the American taxpayer will be deprived of the true value of this spectrum.

Congress needs to carefully examine and weigh the positives and negatives of whether the auction should proceed as scheduled or further delay the auction.

While the auctions are one of my concerns, the other is the FCC's policy on continuing its spectrum cap of 45 MHz on commercial mobile spectrum licenses.

That is the reason that I have introduced the bill, which repeals the FCC spectrum cap on auctions conducted after the first of this year.

It ensures, Mr. Chairman, that market forces rather than regulations drive the wireless sector. Let me make clear for the record that this legislation serves as a means to begin a dialog and examination of our spectrum policies and I have every intention to work with my colleagues and the witnesses and industry representatives to improve this legislation.

Today the commercial wireless industry is the most competitive sector of the United States telecommunication marketplace. More than 94 million people use wireless phones in the United States. Two hundred thirty eight million Americans can now choose between three and seven wireless providers. More than 88 million Americans can now choose from among six or more wireless providers and 88 million Americans can chose among five wireless providers.

While in the early years of commercial mobile services the cap served as a means to ensure that competition thrived, the current 45-MHz spectrum cap is beginning to impact innovation and competition in the wireless industry.

Without sufficient spectrum, wireless carriers will soon face increasing difficult in meeting the growing demand for existing services, as well as face limited competition by denying wireless providers access to open markets.

Consumers ultimately are denied the benefits that arise from additional competition such as lower prices and innovative services.

Furthermore, wireless providers have limited room for advanced services such as data on their networks as they plan for Third Generation, 3-G, services, which will include enhanced voice, video, Internet and other broadband capabilities.

The lack of spectrum threatens the ability to expand current systems and entice new customers. Additionally, continuation of the spectrum cap will result in the continued lag of the United States companies behind Europe and Japan in the deployment of wireless 3-G technologies.

To put the United States 45 MHz cap in perspective, Japan's leading wireless carrier, DOCOMO, has 86 MHz of spectrum everywhere in its country and in Britain most companies operate with a 90 MHz spectrum allocation cap.

I have a chart here, which illustrates what I just mentioned. The U.S. is dwarfed internationally as compared to Japan, Britain or even Argentina in allowing spectrum allocations.

In fact, many countries, including Australia, Brazil, Korea, the Philippines, Singapore, Taiwan and Venezuela don't even have a spectrum cap.

So, Mr. Chairman, the spectrum cap was originally adopted in order to prevent the concentration of control over spectrum in too few hands. But with competition in the provision of wireless services now a reality, rigid structural regulations such as a spectrum cap are no longer necessary to ensure a robust wireless marketplace.

Commissioner Michael Powell in the 1998 biennial review of spectrum caps stated, "I cannot imagine any other industry segment that can better laud their state of economic competition as meaningful."

Furthermore, the anti-trust agency's review of mergers between wireless carriers is sufficient to prevent undue market competition by wireless carriers even in the absence of the market cap.

Commissioner Powell, who once served as an anti-trust attorney at the Department of Justice furthermore stated, "I think the barriers to reconsolidation are pretty high."

Finally, this legislation I am offering prevents the FCC from imposing the commercial mobile radio service spectrum cap on spectrum auction after January 1, 2000. It does not repeal the current spectrum cap on CMRS spectrum or lift the cap on spectrum that has already been auctioned.

I think this legislation is timely to ensure innovation and competition in this country and I thank you again for holding this hearing.

Mr. TAUZIN. The Chair thanks the gentleman.

The Chair is pleased now to welcome and recognize the ranking minority member of the full community, the gentleman from Michigan, Mr. Dingell, for an opening statement.

Mr. DINGELL. Mr. Chairman, first of all, thank you for recognizing me. Second of all, thank you for holding the hearing.

The Federal Communications Commission was established nearly 70 years ago. The primary purpose of that agency at that time and today, too, is managing the public spectrum. In my view, that duty remains the most important function of the Commission to this very day.

Unfortunately, the FCC needs, at times, to be reminded of where its priorities lie. Instead of focusing here on making sure that services are delivered to the public in the most efficient and timely manner with competition and other virtues that would be helpful to the consumer, the agency not infrequently strays from its core mission to pursue some other agenda. At this time I do not know what that agenda might be.

For example, this community has repeatedly advised the commission to take steps to avert what has become known very widely as the C-block debacle.

The advice of the community was largely ignored by the agency. The FCC issued C-block licenses after protracted delay, causing untenable financial difficulties to the bidders.

The debt restructuring plan eventually adopted by the FCC was too little, too late, and wholly unworkable. Many companies that had bid on these licenses found themselves with few alternatives

but to seek Federal bankruptcy protection, something which has complicated the situation and which has delayed the entire handling of the matter.

Why is this important? We would not be holding this hearing today on H.R. 4758, a bill dealing with the application of spectrum caps to the re-auction of C-block licenses if these companies were actually competing in the marketplace.

We would than have 4 to 6 competitors in every market. The United States would be well on its way to achieving wireless substitution for landline service, as is the case in many other countries around the world.

You may draw from that statement that we are falling behind other countries because of the behavior of the FCC. The commission, however, still has the opportunity to adopt a pro-competitive, pro-consumer plan with respect to most of these C-block licenses.

But, as usual, it stubbornly refuses to do so for reasons that quite frankly are beyond my comprehension. The FCC could simply accept full payment of nearly $5 billion from the largest C-block licensee.

This additional competitor would immediately begin providing service in countless markets throughout the country. Instead, the commission wrong-headedly insists on re-auctioning these licenses, in large part to incumbent wireless companies in existing markets. By definition, this means less competition, higher prices and poorer service for consumers.

If the spectrum cap is eliminated as proposed here, incumbents would bid on all the re-auctioned spectrum making a bad situation still worse and reducing the level of competition and service available to consumers as well as potentially reducing the value of the sale to the taxpayers. We will hear much today about the need for incumbent providers to get access to more spectrum. Perhaps that is so. I do not question either the arguments nor the motives. I think it is perfectly reasonable to devote more spectrum for commercial mobile service in the light of exponential growth and demand as well as future rollout of so-called Third Generation services. In fact, I support the allocation of new spectrum for this purpose as well as the commensurate increase in the spectrum cap when this new spectrum is auctioned off.

However, additional spectrum should not be made available to incumbents by taking it from everyone would-be competitors, particularly those who are already licensed but not operating in the band. This action would clearly be contrary to the public interest and would certainly cause a significant loss of competition. Not only would it reduce the number of competitors in the market, but it would actually cause further delay in the rollout of new services.

It also would raise questions as to the value of sales by the FCC with consequent losses of money to taxpayers.

Because most of the C-block licenses the FCC wants to re-auction are currently embroiled in litigation, the high bidder in any re-auction would most certainly be precluded from occupying the spectrum for a substantial period of time.

Even if potential bidders were willing to assume this risk, the public would be precluded from receiving the benefits of additional capacity until the courts lift the cloud over its title.

I would note to all that this could take years to resolve and during the time that we wander in this quagmire service will not be made available to the consuming public and we won't have the vaguest idea of who will get the spectrum or who will get to use it and how the service will be made available to consumers.

The agency still has an opportunity to settle the litigation once and for all. It can do the simple, intelligent thing, accept nearly $5 billion on behalf of the U.S. taxpayers, watch these licenses go to work as early as tomorrow for the benefit of American consumers to increase competition and very frankly to serve the public interest.

Or, the commission can, as it appears to be determined to do, opt for protracted litigation, a cloud over the re-auction, and fewer competitors in the market, a delay in service rollout and probably a loss in money for the taxpayers.

It would appear that the commission should spend more time in managing the spectrum for the public benefit and less time in Federal court.

Thank you, Mr. Chairman.

Mr. TAUZIN. The Chair thanks the gentleman.

The Chair wishes to associate itself with the gentleman's comments regarding the C-block auction. I think they are awfully cogent and well placed.

I hope the commission begins to pay some attention to that kind of logic. It makes awfully good sense.

Mr. DINGELL. We share that hope.

Mr. TAUZIN. We certainly do.

The Chair will recognize the vice chairman of the committee, Mr. Oxley from Ohio.

Mr. OXLEY. Thank you, Mr. Chairman. Let me welcome our good friends and colleagues, Mr. George Nethercutt and Gil Gutknecht as well as Greg Rohde and Tom Sugrue. Neither one of them are strangers to the committee, particularly. We are glad to have you here.

I sponsored the spectrum auction legislation back in the 1980's and for a while there I thought I was a lonely voice, indeed I was a lonely voice in the wilderness.

Finally, in 1993, we struck pay dirt and passed the first spectrum auctions of the radio spectrum and indeed produced tens of billions of dollars for the public treasury, something that all of us in this committee should be very proud that we were able to accomplish.

It wasn't easy, but I think the success of the auctions over the years have been obvious to everybody concerned in terms of dollars raised and in terms of fairly allocating a valuable public resource.

As a frequent critic of the FCC, it is only fair that I commend the FCC for its management of the bidding process, particularly the first round, I thought, went extremely well. It was very well managed and in a situation that nobody had ever had a opportunity to participate in before.

From my discussions and witnessing the auctions firsthand, I have to give a great deal of credit to the FCC and the staff for what they were able to do. All of us as taxpayers and consumers are benefiting from those decisions.

But spectrum auctions and spectrum management are about more than just money, although that is obviously one heck of an important component, particularly in the lean years when we had massive budget deficits.

Spectrum policy is also about things such as promoting the deployment of new technologies, protecting public safety, managing interference, and coordinating with international bodies.

So as I said, I am pleased that we hold today's hearing to examine these issues, all of which are quite current, and particularly as a co-sponsor of the gentleman from Florida, Mr. Stearns' legislation to lift the caps on the amount of new spectrum providers may purchase at auction, I do believe that the existing caps could hinder the timely deployment of Third Generation wireless services in some markets, much to the detriment of our economic expansion, much to the detriment of new technologies, much to the detriment of consumer choice.

So I am pleased to associate myself with the remarks of the gentleman from Florida and to commend him for his legislation. That is why I am proud to be a co-sponsor.

I am looking forward to a lively discussions on these and other issues. With that, I yield back.

Mr. TAUZIN. The Chair thanks the gentleman The Chair recognizes the gentleman from Ohio, Mr. Sawyer, for an opening statement.

Mr. SAWYER. Thank you, Mr. Chairman. Thank you for this hearing. It is a pleasure to welcome our witnesses, particularly George and Gil, to the committee.

The subject we are here to talk about today is important. The May 2000 World Radio Conference was a great success. Specifically the U.S. was able to identify three additional bands of spectrum for 3-G allocation.

This additional spectrum is anticipated to meet the forecasted growth of traffic and services that will outstrip the capacity of spectrum identified in 1992. After the success of the conference, it is time to begin the process of identifying and specifying how and when additional 3-G spectrum can be made available domestically.

While some European countries in Japan are expected to begin deployment as early as 2001. U.S. wireless industry does not anticipate 3-G deployment until around 2003.

Failure to keep pace with world allocation and failure to reconcile U.S. spectrum allocation with the rest of the world will harm U.S. consumers, manufacturers and service providers.

There are a lot of problems and roadblocks associated with U.S. allocation of the three additional bands because much of the spectrum set aside is already being used.

For example, the 1755 to 1850 MHz band is currently allocated in the United States for exclusive government use.

While the European Union would like that spectrum to be allocated for 3-G services in the U.S., some Federal agencies, particularly the Department of Defense are concerned that any 3-G services that are licensed in the band could interfere with existing DOD communications.

I also understand that much of the spectrum to be allocated in the next spectrum auction scheduled for September is already used by television stations.

I would really be interested in hearing today from NTIA and FCC regarding the effects of high-density mobile and fixed systems and their impact on existing planned communication systems and some of the additional frequency bands identified at the conference.

I am also interested in hearing today from the FCC regarding spectrum caps. These caps have caused network congestion and extended busy signals or delays. They have been routinely criticized by many communications providers as preventing the growth and innovation of existing wireless networks and systems.

Mr. Stearns' bill is one approach to deal with those problems. I understand there may also be technological approaches that would be just as effective.

I look forward to a candid discussions with the FCC on the full range of options. There are many of us who are on the committee who a friend of Elmore Brock, the Chairman of the European Union Foreign Affairs Committee. He joined us in Tucson earlier this year and as we drove the airport together he pulled out his telephone and began a conversation in German. It went on for 4 or 5 minutes. When he got done he closed his phone and he looked at me and said, "I was conducting a live radio interview in Germany with some of the editors of my newspapers."

He said, "They thought I was there."

He said, "Can you do that with your phone?"

I said I didn't think I could.

He said, "Wait until you see what we are going to be able to do next year."

I just hope that American consumers will have the opportunity to do the same thing that Elmore Brock does as a matter of ordinary conduct of business.

Finally, let me say, Mr. Chairman, that I think you are right to note that despite the fact that Mr. Oxley is regularly credited with putting us over the top in terms of balancing the Federal budget, that spectrum allocation should not drive fiscal policy, but it is also important to understand that fiscal policy should not drive spectrum allocation.

With that, I yield back the balance of my time.

Mr. TAUZIN. I thank my friend. I would like to point out that we can do that with some of our phones. We just can't do it in German.

The Chair yields to my friend from Oklahoma, Mr. Largent.

Mr. LARGENT. Thank you, Mr. Chairman. I have no questions at this time.

Mr. TAUZIN. Mr. Wynn from Maryland is recognized.

Mr. WYNN. Thank you, Mr. Chairman. I don't have a formal opening statement. I just want to express a concern that I have or more of an inquiry. As we talk about spectrum management, I hope we do not focus exclusively on the role of the FCC, but we also focus on the management by the companies.

I have been advised that some companies that are managing their spectrum are saying that they actually have adequate amounts of spectrum at this point while others are saying that as

a result of tremendous demand that they need to have the caps lifted.

I have not reached a conclusion on this issue, but I did find it interesting that there is apparently some different of opinion within the industry on this issue.

The second issue that I had an interest in was the notion of the designated entity. I think it was initially designed to bring new entrants and diversity.

I would like to know more about who these companies are and whether in fact that goal is in fact being achieved, if these are in fact companies that reflect diversity or whether they are just companies who would be natural competitors and whether or not the designated entity notion really has any meaning today.

So I hope that those issues will be reflected in the course of today's hearing. Thank you.

Mr. TAUZIN. I thank the gentleman. Are there any further requests for opening statements? The gentleman from Chicago is recognized.

Mr. RUSH. Thank you, Mr. Chairman. Mr. Chairman, I commend you on this hearings that you are holding this morning. As technology continues to develop at a fast pace, Americans are becoming more savvy in the field of technology and are demanding high-speed data.

The ability to download information, music and videos, from the Internet onto their wireless phone is becoming the accepted norm.

However, many technology companies are unable to meet this norm or consumer demand because of the lack of spectrum.

Further, it is argued that many American companies are unable to compete globally in the telecommunication market because their foreign counterparts have access to more spectrum than they do.

The availability of spectrum is thus a important issue that must be dealt with delicately. It is suggested that one way to deal with this issue is to repeal the spectrum cap, especially in C- and F-block licenses.

However, I fervently and unequivocally oppose any proposal to curtail the C-block licenses for designated entities. I would like to caution my colleagues that any proposal to tinker with the C-block licenses should not undermine the spirit of those licenses, which is to provide diversity in the communication field.

With that in mind, Mr. Chairman, I thank you again for holding this hearing and I yield back the balance of my time.

Mr. TAUZIN. I thank the gentleman. Are there further requests?

Mr. Luther from Minnesota.

Mr. LUTHER. Thank you, Mr. Chairman. I just also wanted to thank you for holding the hearing and wanted to recognize Representative Gil Gutknecht, a fellow Minnesotan who came to this body the same year as myself and I am pleased that he is having the opportunity to testify here today. Thank you.

Mr. TAUZIN. He gets a lot of respect from this committee, I want you to know that. Thank you, Mr. Luther.

Are there any further requests for opening statements?

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Thank you Mr. Chairman for holding this very timely and important hearing this morning on spectrum management policy.

With the explosion of wireless phone services—as well as other services which require the use of radio frequencies—the demand for spectrum, especially by telecommunications companies, has increased dramatically.

In addition to the increase in wireless customers, is the trend for people to stay on their wireless phones longer, and the roll out of "3-G" services that offers consumers broadband and multimedia capabilities, which are serving as a even greater drain on spectrum. As a result, the wireless companies are crying out for more spectrum.

In just a matter of just 2 short years, we have come upon an urgent policy challenge. In order to maintain our competitive edge in the wireless communications industry, the U.S. will have to deploy the most efficient and effective spectrum management possible, as soon as possible.

However, in this process it will be important to maintain the delicate balance of competition that has developed in the wireless industry which holds prices down and continues to drive technological innovation.

I would like to thank our distinguished panel for being here today to share their perspectives and expertise on how to best govern the use of this scarce resource.

Thank you again Mr. Chairman for holding this hearing today.

I yield back.

PREPARED STATEMENT OF HON. TOM BLILEY, CHAIRMAN, COMMITTEE ON COMMERCE

Mr. Chairman, thank you for calling this important hearing today.

Before I begin, let me take a moment to acknowledge the work of the negotiators for the U.S. Government and the U.S. wireless industry for their recent success at the 2000 World Radiocommunication Conference—better known as WRC just held. All reports seem to indicate that this process was fruitful. While not everything went our way, it seems that the outcome was as a success.

The general subject matter for today's hearing is not new to this Subcommittee. We have wrestled with spectrum management issues a number of times since I have been Chairman and many times before.

In all that time, the Committee has generally tried to defer to the FCC to provide guidance and sound spectrum policy. In fact, it is often this Committee that is forced to fight with other Congressional Committees to keep such policy on the right track. We have not always succeeded at this task and certain poor policies are in place because of others work.

Increasingly, however, it is the FCC's spectrum policies, decisions and timing that are coming under necessary scrutiny. At heart of this scrutiny is the fundamental issue of whether the FCC is prepared to address spectrum needs for the foreseeable future. This Committee must ask if the FCC's spectrum policy is flexible enough to deal with tomorrow's issues, or if it looks back to yesterday.

Let me be plain. I believe that the wireless marketplace is about as competitive as any other telecommunications market out there. Approximately 100 million Americans now subscribe to one of the multiple wireless providers. The number of wireless subscribers is increasing at a dramatic rate.

As more consumers turn to wireless services, providers are being forced to compete for consumers. And the consumer is reaping the benefits of this competition. Low prices, low cost to obtain telephones, myriad of service options to pick from, increasing services and options are just a short list of benefits from competition.

Fortunately, the future looks even brighter. Wireless technologies are improving daily. Their capabilities are surpassing past achievements by leaps and bounds. Wireless telephones once focused on voice communications are now being transformed into multimedia, multipath communication devices.

However, popularity tends to lead to new problems. For the wireless industry, this can mean congestion, stalled innovation or delayed roll-outs. Success at WRC only starts another process for additional fights for spectrum at the FCC.

Today's legislative hearing is focused on my friend from Florida, Mr. Stearns' bill. While I need more time before commenting on the merits, I do think that it is headed in the right direction. The old rules of the FCC on spectrum caps need to be reexamined and if the FCC is not going to change them, we must give serious consideration to doing it ourselves. This is especially true given how the FCC has handled spectrum caps for the 700 MHz auction.

In addition, today I hope to hear when the FCC and the NTIA plan to complete studies necessary to allocate additional spectrum for so-called third generation wireless—or 3G. This should be a priority given the rest of the world's movement on 3G issues. Perhaps the Committee needs to consider putting a statutory time limit on these studies if answers are not sufficient or forthcoming.

I thank the witnesses in advance and look forward to the testimony. I yield back my time.

Mr. TAUZIN. The Chair would ask that all of us take a moment of silence to recognize and mourn the passing of our friend, Senator Coverdell. While you are doing so, I would ask you also to think and pray for the passing of our good friend, Mr. Markey's father, who he lost this weekend.

We will take a moment of silence.

(A moment of silence.)

Mr. TAUZIN. Now we will present our first panel. We are pleased and honored to have two of our fellow Members of the House here to testify on important issues regarding spectrum management.

From Washington State, the Honorable George Nethercutt, Jr., and from Minnesota, as was recognized by Mr. Luther, the Honorable Gil Gutknecht.

We are also pleased to recognize the Honorable Greg Rohde, the Assistant Secretary of the Department of Commerce who survived 10 years on the Hill with Senator Byron Dorgan. A frequent contributor to our hearings, Tom Sugrue, the Chief of the Wireless Telecommunications Bureau of the Federal Communications Commission, Mr. Malcolm Lee, the Assistant Deputy Secretary of the Department of State, and also Mr. Dale N. Hatfield, Chief of the Office of Engineering and Technology who is joining Tom Sugrue here today.

So we want to welcome our first panel and we thank you for your contributions. Under our rules your written statements are a part of our record without objection, as are the written statements of the members without objection part of the record.

We will ask the members of the panel as well as the members of the committee to recognize the 5-minute rule. We have some timers to kind of guide you guys. If you please, watch those timers. When they hit yellow, kind of start wrapping up for me.

We will begin with a dear friend from Washington State, the Honorable George Nethercutt, Jr.

STATEMENTS OF HON. GEORGE R. NETHERCUTT, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON; HON. GIL GUTKNECHT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA; HON. GREGORY L. ROHDE, ASSISTANT SECRETARY, DEPARTMENT OF COMMERCE; THOMAS J. SUGRUE, CHIEF, WIRELESS TELECOMMUNICATIONS BUREAU, FEDERAL COMMUNICATIONS COMMISSION; ACCOMPANIED BY DALE N. HATFIELD, CHIEF, OFFICE OF ENGINEERING AND TECHNOLOGY, FEDERAL COMMUNICATIONS COMMISSION; AND HON. MALCOLM R. LEE, ASSISTANT DEPUTY SECRETARY, DEPARTMENT OF STATE

Mr. NETHERCUTT. Thank you, Mr. Chairman, and thanks to all the members of the subcommittee for welcoming Congressman Gutknecht and me to talk about this important issue today.

Mr. Chairman, I believe Congress has the obligation to ensure that spectrum allocation proceeds in a fashion that does not unfairly penalize incumbent users. Unfortunately in my experience, recent FCC decisions have harmed small businesses that rely on assured access to spectrum.

Little regard is given to licensed users that are wholly dependent on spectrum and the committee should keep this in mind as it reviews this area. I represent a company called Itron from Spokane, Washington, which manufactures equipment used by utility companies to remotely monitor individual meters.

Itron has key operations in Washington, Minnesota, North Carolina and customers throughout the United States. Many of Itron's products rely on ERTs, Encoder-Receiver-Transmitters, which link a customer's meter directly to the utility company through radio signals.

These products greatly enhance the utility's ability to monitor power usage down to 15 minute intervals, if necessary, load profiles, outage information, meter tampering and a host of other important data points and allow dynamic decisionmaking on such things as efficient asset utilization, energy distribution and energy spot market purchases as customer needs change.

There are more than 16 million automatically read meters in the United States today. As we consider legislation to deregulate electricity, these systems will be in even greater demand.

Obviously, this business in dependent on continued access to spectrum to grow and thrive and the company has several licenses in different frequencies which have allowed it to roll out widely used products.

While Itron has been an industry leader, having invested over $100 million in technology that uses the band, it has also encountered significant interference from the FCC in maintaining its access to licensed spectrum.

Last year Itron struggled with an FCC rule that suspended the processing of all applications in the 928/952/956 MHz bands for applicants who did not provide subscriber services.

This multiple address system rulemaking essentially put a freeze on Itron's business. No utility was willing to make the large capital expenditures associated with a system that was subject to this application freeze. This severely depressed business.

Similarly, utilities that had planned, budgeted for or even ordered automatic meter reading equipment faced a scenario in which they would be unable to obtain licenses. After extensive consultation, this year the FCC lifted its freeze in the 900-MHz band, only to insist on reallocating another band of spectrum that Itron uses. As a result of the FCC June 8 report and order, Itron and its customers are again struggling with the same uncertainties.

Itron uses the 1427 to 1432 MHz band under a 1994 nationwide FCC license that enables power and water utilities, critical industry infrastructure users, to develop and deploy wide area networks for telemetry communications to and from utility meters.

Itron is the only licensed commercial user of the spectrum and two utility systems have already installed Itron equipment to use this spectrum for fixed network monitoring.

In addition, Itron has pilot customers that use the spectrum in Alabama, Illinois, New York, Maryland, California, Texas and Michigan. Several other Itron customers have expressed an interest in upgrading to their flagship product for large commercial and industrial users, which requires the 1427 to 1432 MHz band.

On June 8, 2000, the FCC allocated the 1429 to 1432 MHz band and 11 other MHz as well on a primary basis to Wireless Medical Telemetry Services, (WMTS), in ET Docket 99-255, effectively locking Itron out of an important part of the band.

The FCC report and order gives no indication of the likely outcome for the remaining two MHz, 1427 and 1428 in this band, creating significant uncertainties for Itron and an unfavorable business climate.

No utility is likely to buy systems that depend on this spectrum unless they have assurance that it will continue to be available in the future.

Other customers cannot be accommodated without Itron having access to the upper three MHz of the band. Given last year's action on the 900-MHz band, potential customers are going to be shying away from doing business with Itron. The FCC has created this problem.

Energy providers and users would be the immediate losers as they would be unable to distribute and use scarce energy resources in the most efficient way possible and ultimately we would all be the poorer for this outcome as increased inefficiencies were felt throughout the economy.

The irony of this occurring against the daily backdrop of reports about high energy prices, inefficient energy distribution, and looming brown-outs should not be lost on the FCC.

I see the red light is on, Mr. Chairman. I would just say my hope is that this committee would act to take steps to protect incumbent users and not effectively, by silence on the FCC's part, put a company out of business or threaten its continued future.

I will submit a formal testimony for the record in full so that you can have the benefit of my complete remarks.

Mr. TAUZIN. Thank you, Mr. Nethercutt.

The Chair is now pleased to welcome the Honorable Gil Gutknecht of the State of Minnesota.

STATEMENT OF HON. GIL GUTKNECHT

Mr. GUTKNECHT. Well, thank you, Mr. Chairman. I have a written statement that I will submit, but I just want to summarize for the members what has happened here.

We have a small, little company with headquarters in George's district, but they employ 430 people in my district. Right now that company is hanging on by its fingernails because of a ruling that was made June 8 by the FCC.

In effect what we have here is a pioneer company that went out and developed a very useful product for utilities, the reading of meters, whether it is gas or electric or water, to manually go around to every house and attempt to read those meters is a very expensive and sometimes even dangerous proposition because of aggressive dogs and other things that they encounter trying to get those meters read.

They came out and developed a very interesting technology using wireless and using a very small section of band width. What we have now is the FCC, by refusing to recognize an agreement that Itron had worked out with a competitor in that same spectrum.

Now we have this company with over 1,000 employees, almost half of them in my district, that basically is looking at an uncertain future at best because many utilities will not go ahead and order the equipment that it takes to install this if they are not certain that they are going to have the spectrum.

All of this was very solvable. The parties to this had reached an agreement, but the FCC refused to acknowledge that and on June 8 they really sent this company into a tailspin.

We are basically here today asking for some kind of relief from this subcommittee and the Congress. But at the end of the day, I have to say this, it really should not require an act of Congress to get some common sense and fairness out of a Federal agency.

It is really almost an embarrassment that we have to come before this committee, but I want to thank you for the opportunity because over 1,000 people in George's district and in my district are counting on us to provide some kind of relief and just basic fairness in the allocation of the spectrum.

This is a pioneer. They homesteaded this particular chunk of the spectrum and now our own government seems to be prepared to go out and shoot them. I think there is something wrong with that formula.

I yield back the balance of my time.

[The prepared statement of Hon. Gil Gutknecht follows:]

PREPARED STATEMENT OF HON. GIL GUTKNECHT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr Chairman, Members of the Subcommittee, I want to thank you the opportunity to testify today. I want to thank my colleague Mr. Nethercutt for his testimony as well.

In Waseca, Minnesota, in my district 430 employees build utility meter reading equipment for Itron. The June 8th decision by the FCC has needlessly put these employees futures in jeopardy by casting a shadow over the future of Itron's business. As Mr. Nethercutt has pointed out, this is not the first time the FCC's carelessness has put Itron in jeopardy. By putting Itron's spectrum in doubt utilities will be extremely hesitant to make the large capital expenditures associated with a system that may or may not have spectrum available at a future date.

The biggest problem with the FCC's actions is that they could easily been prevented by offering a win-win solution for Itron and Medical Telemetry. When Itron first became aware that Medical Telemetry might possibly move to the spectrum that Itron occupied, Itron went to Medical Telemetry and the two sides were able to notify the FCC on May 31, 2000 that they were optimistic that a basis for spectrum sharing could be finalized very shortly. Both parties asked the FCC to issue a Further Notice of Proposed Rulemaking in order to conclude the band sharing agreement. Both sides recognized their technologies were compatible and that they could share the spectrum.. Further, Itron through its band sharing agreement with Medical Telemetry would facilitate development of Medical Telemetry's own equipment by providing its engineering expertise to save Wireless Medical Telemetry Services the costly R & D expense to bring their own equipment into service.

Instead of acting on this agreement, the FCC issued a Report and Order on June 8th which granted primary usage of the 1429-1432 band to the Wireless Medical Telemetry Service. These 3 megahertz were part of the 5 megahertz band that had previously been used by Wireless Utility Telemetry. The Report and Order leaves the future use of the remaining 2 megahertz in doubt, creating even more uncertainty for Itron's products.

What did the FCC do wrong? The FCC rightly recognized the validity of Medical Telemetry's needs. But at the same time they did not recognize that Medical Telem-

etry needs a compatible spectrum neighbor. The FCC should have recognized Itron, especially in light of a spectrum sharing agreement, as a compatible neighbor to Medical Telemetry. Further, the FCC should have recognized that Itron, as the only commercial user of the spectrum, has an equally valid claim to the spectrum band as Medical Telemetry.

As we have heard the FCC has a goal to encourage the most efficient use of spectrum. But, when offered a mutually beneficial arrangement between to competing parties for spectrum, the FCC denied their arrangement in favor of one primary user. Based on the proposed agreement submitted to the FCC by Medical Telemetry and Itron, and willingness of Itron to even assist in the development of Medical Telemetry's technology, the FCC should have made Critical Industry Infrastructure and Wireless Medical Telemetry Services co-primary users of the spectrum.

Mr. Chairman, Itron is a stark example of a federal agency having the opportunity to make the right decision and choosing the wrong one. They have put a company with over 1200 employees in serious jeopardy. When a mutually beneficial agreement was proposed between the two interested parties, the FCC arbitrarily and carelessly decided to ignore this agreement and offer the spectrum to just one of the potential users. Itron has been left with a fraction of its former spectrum and the knowledge that at a future date it could lose even that.

I thank you for the opportunity to testify today. I hope that Itron's highlights a problem with FCC's spectrum allocation and I welcome the continued interest of the Committee to ensure fair and equitable spectrum allocation practices.

Mr. TAUZIN. I thank the gentleman.

The Chair will do something in order to accommodate my friends. If the gentlemen have to leave to go to other business, the Chair will be happy to allow them to do so and to separate this panel at this point.

Let me first ask if there are any questions of the members. I would like to engage you just a little bit on the issue before you do leave.

My understanding was that in 1992 Congress itself sought to prioritize automatic meter reading technology development and that then Chairman Dingell and Markey added a provision in the House Bill 6191 which became Public Law 102-556 directing the Departments of Commerce and Energy in fact to determine the application of automated utility meter reading technology, that it was in the public interest and would be in fact good for energy, water conservation, public safety and economic development.

It seems like Congress prioritized this. The Commission established spectrum for this company to go out and do it. The company goes out and does it. There is a concern about sharing the spectrum with other medical users I think. Are you saying that the telemetry folks who wanted to share the spectrum were ignored?

Mr. NETHERCUTT. None whatsoever, to my knowledge, Mr. Chairman. That was what was so shocking; the expectation was that there would be a mention of it, a confirmation of it, a recognition of the fact that there is this agreement that would allow a sharing, a fair sharing, an equitable sharing.

Mr. TAUZIN. And the licenses for Itron were renewed through August 15, 2004 by the Commission on May 12, 1999. Is that right?

Mr. NETHERCUTT. Indeed.

Mr. TAUZIN. So we have some real strange situations here. We are going to want to get some answers from Mr. Sugrue at the appropriate time.

Do either one of you want to comment before I turn it over to the other members?

Mr. GUTKNECHT. Well, Mr. Chairman, just one final point about this. The people at Itron had also told the medical telemetry people

they would help them with some of the research and development. So it was a win-win situation.

For some reason which we cannot explain the FCC decided not to acknowledge that agreement.

Mr. TAUZIN. The Chair thanks the gentleman. Are there further comments or questions by the members?

Mr. MARKEY. Not right now.

Mr. TAUZIN. Mr. Oxley.

Mr. OXLEY. Maybe it would be appropriate while the members are here to ask Mr. Sugrue to give his side of the story and perhaps we can uncover something.

Mr. TAUZIN. The gentleman makes a good suggestion. Let me do that. Mr. Sugrue, I know you have a written statement and you have a lot to tell us about spectrum management. But if you will take the mike, sir, and give us the Commission's point of view on this so that we can understand why this has occurred.

Mr. SUGRUE. I am going to use the first question to defer to my colleague, Dale Hatfield, whose office did the allocation decision and is familiar with this topic.

Mr. TAUZIN. Mr. Hatfield.

Mr. HATFIELD. Yes, thank you. I think this discussion we have had here really illustrates the difficulty that we are facing in this country in spectrum management.

You heard a very eloquent speech regarding the value of doing automated meter reading and using radio waves to do so. You know, I would support and understand that as well. But we also have the high cost of medical care in this country that concerned us greatly. Wireless medical telemetry systems are used in hospitals, for example, to allow patients to move around so that they can be walking and so forth and you can monitor their vital signs and so forth and see how well they are recovering. For example, in a hospital one of the problems they have is they allocate certain amount of their space for cardiac care and different types of care. It is very difficult to know in advance how many patients you will have of one category or another. By making the medical equipment be able to be moved around, one can change your equipment assets, move them around, and get better utilization of your hospital facilities because they are connected by wireless means.

You know, I am not real familiar with exactly what happened here, but what I am very familiar with is that it is a very, very difficult issue here trying to make the decision.

Mr. TAUZIN. Mr. Hatfield, we interrupt to try to get some answers. You are telling me you are not familiar with it. That is not good. You represent the Commission here. The Commission made the decision.

Mr. Sugrue, if you can help us, please do. Somebody made a decision that despite the fact that the medical telemetry people wrote you a letter saying that they had no problem sharing the spectrum, and Itron offered even to help them develop the technology to share, that that was ignored.

I think we need to know why was it ignored. Why did the Commission in effect boot Itron out to give this spectrum to the telemetry folks?

Mr. HATFIELD. First, sir, in our order in June there is actually a footnote in there that recognizes Itron's desire to operate in the band. So I don't think it is correct that we ignored it.

Moreover, we are prepared and are very much encouraging the sharing of this, trying to work out agreements where the spectrum can be shared between these two vital interests. That is our whole goal.

Mr. TAUZIN. Are you telling me that the Commission recognized the sharing agreement or not? What does this footnote mean?

Mr. HATFIELD. I am doing this by memory. My recollection is that they were asking to be a primary user in the spectrum and that we recognize that in our dealing with them.

Mr. TAUZIN. I am still very confused. Mr. Sugrue, let me make a complaint on it.

Mr. RUSH. Mr. Chairman, I am sitting here and I am trying to get the——

Mr. TAUZIN. Mr. Rush, I am, too. I will recognize you in a second. Let me just see if I can complete this.

You saw this panel. You knew that Mr. Nethercutt and Mr. Gutknecht were going to be here today. Mr. Oxley correctly asked to give you a chance to respond. Why are you not prepared to respond? Why can't you tell us what happened?

Mr. HATFIELD. I can only speak for myself. I had no indication before I arrived here today that we would be asked a question on this matter. Moreover, it is an open matter at the Commission now. They have come in to us with a petition and we are dealing with that petition.

Mr. TAUZIN. Mr. Sugrue, would you kindly respond, sir?

Mr. SUGRUE. I don't know if there is a problem in communication, but we were not apprised that this was the topic or that the two gentleman would be testifying. We would have certainly come with a better answer. I apologize for that.

I will say, the last time I talked with anyone from Itron was last fall about the MAS situation, the MAS spectrum that was referred to in at least one of the statements.

This was a program in response to or an order the Commission put out because Congress changed the law in 1997 to require us to auction off spectrum, commercial spectrum, when there were mutually exclusive applications.

The Commission put a freeze on the spectrum until it could write rules on that. We thought Itron made a compelling case and we lifted the freeze in December of that year.

I don't think there is any attempt to certainly put anyone out of business. You will see in my statement, if we get to it, that I sort of reference utility reading as an innovative concept.

I guess I would just ask you permission to get back to you on this.

Mr. TAUZIN. I think that is fair. I will recognize other members in a minute.

Mr. Hatfield, you said there was a petition before the Commission. What is the timetable on that petition?

Mr. HATFIELD. That is my understanding.

Mr. TAUZIN. What is the timetable on it?

Mr. HATFIELD. We will do it as quickly as we can, sir.

Mr. TAUZIN. Let me ask that within the next 10 days you submit to us in writing a response to the concerns expressed by our two members here today. We particularly would like to know what happened to the letter confirming an agreement by the two users to share and why was it ignored, if in fact it was ignored.

What does the footnote mean, if in fact it has meaning? Can Itron continue to operate or not? What is exactly the situation of the company? We are obviously interested in resolving this if we can without the necessity of legislating.

I will ask my friend from Illinois to ask his question.

Mr. RUSH. Mr. Chairman, I just wanted to comment on this issue and how it is being conducted. Mr. Chairman, I know you are a very, very fair chairman and I know that you don't want to put any witness under any undue and surprising circumstances.

I just kind of believe that if we would take a step back and allow the FCC to respond to the request of other members and also the request of yourself, Mr. Chairman, we would probably get better answers.

I am just kind of surprised, and I know that you don't want to bushwhack any witnesses here. That is not your style. But it seems that that might be what is happening here and I would just respond that these witnesses should be allowed to go back to the FCC and respond to both the Members of Congress and also to you, Mr. Chairman.

Mr. TAUZIN. If the gentleman will yield, the Chair is not above bushwhacking. I want you to know that.

Mr. RUSH. Mr. Chairman, I want to remind you that lat time that I and other members from this side bushwhacked a witness, you were very, very upset.

Mr. TAUZIN. I guess it depends on whose ox is being bushwhacked. I was certainly not trying to do it in this case. I thought you were prepared to respond to the witnesses who were going to be part of your panel.

If you are not, I am suggesting that within the next 10 days you respond in writing and that you try to give us some very cogent answers to what I think are some very serious questions raised by both Mr. Nethercutt and Mr. Gutknecht.

The Chair recognizes my friend from Massachusetts.

Mr. MARKEY. Thank you, Mr. Chairman. You know, this is a perfect example of the spectrum management policy that we have had in place and the ongoing need to revisit it. Here we have, obviously, a very important wireless meter reading technology that saves consumers lives.

We have had an introduction over the last several years of wireless medical telemetry which doesn't save people's money, it saves people's lives; right?

So you have this kind of balance that you are trying to strike in assuring that all the technologies are able to be deployed.

I think it would be important, especially in an era of continued Medicare cutbacks, of trying to squeeze more efficiency out of the existing medical system, to utilize the technology to make sure that the medical centers are able to provide for families, especially in these cardiac or other situations, with the maximum amount of in-

formation that the medical personnel can gain access to while serving more and more patients.

So working out some kind of a compromise here seems to me to be in the best interests of the American public. I think the FCC should be give, you know, 10 days as you were saying, Mr. Chairman, to report back to us and give us their set of reasons for trying to create a new balance.

Mr. TAUZIN. If the gentleman would yield to me, let me point out that staff indicates to me that medical telemetry was given a total of 14 MHz and there is a real question whether it needs additional MHz. It has room to grow for the next 10 years already.

So kindly answer that inquiry. The information we have is that they simply didn't need to have priority spectrum allocated to them; that they had enough to go for 10 years.

Second, they wouldn't even have equipment that could operate in the 14 to 32 bands in the next 2 years. So, you know, there are some real questions as to why this action was taken as precipitously as it was. The gentleman is correct, it raises some real questions about the way spectrum is being managed.

So please take the time and respond thoroughly to us, if you can, Mr. Sugrue. We would appreciate it.

Are there any further questions or comments for our two colleagues so that I might dismiss them?

I thank you both for your contributions. We will make available to you whatever we find out from the Commission regarding the current status of this dispute and hopefully get it resolved without the need for us to legislate.

Mr. NETHERCUTT. Thank you, Mr. Chairman.

Mr. TAUZIN. Thank you very much.

Mr. SUGRUE. Mr. Chairman, we will respond in that timeframe.

Mr. TAUZIN. Thank you, Mr. Sugrue and Mr. Hatfield. I appreciate it.

The Chair is now pleased to recognize an old friend, the Honorable Greg Rohde, Assistant Secretary of the Department of Commerce, for his testimony. Mr. Rohde.

STATEMENT OF HON. GREGORY L. ROHDE

Mr. ROHDE. Thank you very much, Mr. Chairman. I really commend you and the members of this committee for holding this hearing.

I came here thinking I was going to begin my testimony with an obviously stupid statement such as that spectrum management is usually a topic that doesn't get people to pound on the doors or pay much attention to it.

Given the discussion we just had, it demonstrates that in Mr. Markey's usual eloquence, I think he has stated very well that we are in a lot of challenges right now in spectrum management and balancing interests.

Spectrum management is not simply a topic for engineers any more. It is something that has very broad social implications. It is not even an isolated telecommunications issue, as we can see with this discussion as well as many others that we will discuss today in the hearing. It has very broad social implications.

NTIA, as many of you know, has two primary functions. One is that we are the policy shop for the administration in developing telecommunications and information policy.

In addition, we have a very important spectrum management function. In a sense we wear both of these hats. Within our spectrum management function at NTIA, we process allocations from 53 different Federal agencies at the rate of about 300 to 400 a day, in other words, about 6,000 to 10,000 of these allocations per month.

This is a very complex, manually intensive process. At NTIA we are trying to change that process into an automated system. Currently, some of the allocations could take up to 15 days to go through the process.

Our goal at NTIA is to turn that process, to move it from 15 days into a matter of minutes, creating a great deal of efficiency in how we conduct spectrum management.

In addition at NTIA, we assess the spectrum availability for about 62 major new Federal rated communication systems each year. This process for each one of these new rated communication systems takes between 4 to 6 months, again on a manual basis.

We are also trying to automate this process as well to try to turn that 4 to 6 months into about a 2-month period of time through automation.

We are hopeful that the Congress will support budget requests in 2002 to provide us funding to continue on this process of automation which is going to result in a great deal of saving for taxpayers and promote a lot of spectrum efficiency.

In addition to these automation procedures at NTIA, we have a couple of policies which we have in order to try to promote spectrum efficiency amongst the constituents that we have in the Federal agencies whose spectrum that we manage.

One of those policies is that we require every Federal agency, before they get a Federal allocation, to demonstrate that that need cannot be met in the commercial private sector, before they can get an allocation.

In addition, we have shown a great deal of leadership at NTIA, prior to my coming to NTIA, of promoting efficient technology such as narrow banding and digital modelization.

In addition, NTIA is engaged in a significant outreach program for public safety purposes. Throughout this week and Monday I hosted a round table on all-hazards warnings. We all know that we have one of the best weather systems and weather prediction systems in the world. We have a very good forecasting system to alert people to natural disasters and storms.

But, there are new technologies out there such as emergency e-mail systems and reverse 911 systems that exist. The question is: How do we integrate this into our hazard warning systems to provide better information to consumers and to promote public safety.

In addition, NTIA is looking at allocating Federal spectrum for Federal, state, and local law enforcement agencies so that they can communicate with each other in the case of an incident in order to protect public safety.

Another area that NTIA is focusing on in our spectrum management responsibilities is we really want to be an agency of innovation.

One of the initiatives that I began when I first got to NTIA as to start an initiative called the WICI, the Wireless Innovations and Communications Initiative. The purpose of this is we think that we need to transform the way in which we have conducted spectrum management in the past.

The purpose of this initiative is to relook at how we conduct spectrum management and to do it in a fashion that promotes innovation of new technologies. The WICI is founded on two very special principles. That is, we need to pull the Federal agencies which we serve to the table and help them identify new technologies that can help them meet their existing needs in a more efficient manner.

At the same time, we need to shoulder our responsibilities to the general public for managing the scarce resource in a way that fosters innovation in the private sector.

As you all know, we are caught in a very tough dilemma of spectrum management and that is, we have conflicting Federal agencies and private sector. We are trying to bring that coordination together.

We also work hard to try to advance new technology such as ultra-wide band. We are currently beginning some testing in ultra-wide band devices in order to participate in the FCC's rulemaking process and provide some comments.

Also, IMT-2000 is a major priority for NTIA. We were very successful in the work this spring in Istanbul in getting the rest of the world to agree to our position that we should have maximum flexibility in identifying multiple bands for IMT-2000.

NTIA believes that development of high speed mobile Internet access is one of the most important public policy decisions we face in our agency.

We believe it has very broad social implications and also goes a long way to helping us achieve our other fundamental purpose at NTIA which is to provide policy guidance to the administration in achieving our goals of expanding Internet access to more and more communities.

With that, I notice the stoplight is on. I will be happy to answer any more of your questions or speak more to you about your interest in IMT-2000.

[The prepared statement of Hon. Gregory L. Rohde follows:]

PREPARED STATEMENT OF HON. GREGORY L. ROHDE, ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION, U.S. DEPARTMENT OF COMMERCE

Mr. Chairman, Ranking Member and other members of this subcommittee, I want to thank you for inviting me to testify today on spectrum management policies and the results of the World Radiocommunications Conference. I am Gregory Rohde, Assistant Secretary for Communications and Information and Administrator of the National Telecommunications and Information Administration (NTIA) within the Department of Commerce. I would like to begin my remarks today by giving a brief overview of NTIA's spectrum management responsibilities, accomplishments and planned improvements; our spectrum outreach to the public safety community; the promotion of new technologies including a new initiative; an assessment of the World Radiocommunication Conference (WRC) which was recently held in Istanbul; and the implementation of future third generation personnel communication systems.

I. SPECTRUM MANAGEMENT

One of NTIA's responsibilities is to serve as the President's primary advisor on telecommunication information policies. The other primary responsibility on behalf of the President is to manage the radio frequency spectrum used by Federal agencies in satisfying their legislatively assigned missions. In this role, NTIA processes the Federal agencies' request for frequency assignments; provides Executive Branch leadership in coordinating both current and future spectrum requirements among the Federal agencies and with the Federal Communications Commission (FCC); develops and promotes positions at Treaty Conferences and other technical and management fora of the International Telecommunication Union (ITU) regarding United States spectrum management interests; and supports specialized administration initiatives that are designed to achieve specific improvements in areas such as air traffic safety, Federal spectrum management procedures, protection of critical infrastructures, and public safety.

A fundamental goal of spectrum management at NTIA, as it is worldwide, is to ensure that there is compatible operation with other radiocommunication systems, validate compliance with spectrum management rules and regulations, and to ensure that spectrum is available for future needs. NTIA's spectrum coordination role is therefore critical to the success of air traffic control, national defense, national resource management, and other vital government functions. Another fundamental goal is to manage this public resource in an efficient manner as to create an environment that encourages private sector innovation. To that end, NTIA's spectrum management function can help advance our broader policy goals to expand access to telecommunications and Internet services to all Americans.

Satisfying Spectrum Needs

NTIA continues to coordinate the spectrum needs of the Federal Government by processing frequency assignment requests by some 53 Federal agencies. NTIA processes approximately 300 to 400 such requests daily through an automated screening process to correct errors in the data and ensure conformity of rules and regulations and through a coordination process with Federal spectrum-using agencies via the Interdepartment Radio Advisory Committee (IRAC) to ensure compatible operation of radiocommunication systems. In addition, NTIA also certifies spectrum availability of approximately 60 to 70 new major radiocommunications annually.

NTIA also provides leadership for and manages the activities of the IRAC, a body of representatives from twenty Federal agencies that are major users of the spectrum. The IRAC has provided valuable advice to the Executive Branch on numerous spectrum policies and issues for the past 78 years. NTIA has maintained a constant relationship with the FCC both through the IRAC and directly to ensure compatible operations of our radiocommunication systems. This is especially important today since the vast majority of the spectrum is no longer divided into exclusive private-sector and Federal-sector bands, but is shared by all users in the United States.

Spectrum Efficiency

The Federal Government constantly seeks to modernize its radiocommunications, increase the amount of information transmitted per unit bandwidth, and expand the use of more efficient digital technology and the use of private sector radiocommunications. In order to improve Federal spectrum use, NTIA uses the following management tools. First, NTIA based on the Office of Management and Budget (OMB) regulations requires that every Federal Government user requesting a frequency assignment determine whether its need can be met by a private or commercially available service provider. This policy has helped encourage consideration of commercial services by many Federal Government agencies, including the Department of Defense.

Second, we promote the use of new spectrum efficient technologies. The Federal Government is a leader in developing new spectrum-efficient techniques such as narrowbanding, digital modulation, and spectrum sharing as well as in the use of the highest quality spectrum-efficient equipment. An example of using these techniques can be shown in the land mobile communications area.

The use of mobile communications is a critical and expanding need for most Federal agencies in the accomplishment of their missions. However, the needs of the private sector for mobile communications in fee-for-service offerings, commercial business uses and public safety operations, which are also expanding, have placed great pressure on NTIA to allow wider access to the portions of the spectrum used by the government mobile services. NTIA has taken the initiative to make sure that all Federal uses are as efficient as possible so that Federal land mobile communications needs can continue to be met in the bands available. The agencies we regulate generally agree with this effort, however, funding is difficult to obtain because it is

so costly to completely replace the current systems, which seem to work adequately. Moreover, the agencies are very concerned about control security and emergency response issues when the most efficient solutions require several agencies to share one network.

Government applications of mobile radios include communications for building security, law enforcement by Federal Bureau of Investigation, Drug Enforcement Agency, Treasury, U.S. Coast Guard, U.S. Park Police and military police, and for communications with vessels and aircraft. As the technology has advanced, the sophistication of services provided has advanced at the same time and the amount of spectrum needed for each individual communication has decreased. However, since mobile radios used in cars and by pedestrians are engineered for long life and durability, they are very expensive and funding for replacement radios are hard for government agencies to obtain; the FBI has asserted it will cost them approximately $4-billion to replace their aging networks with modern technology.

To help solve this problem, NTIA has issued regulations halving the channel widths of all Federal land mobile radios. All new systems are now expected to operate at the narrower 12.5 kHz bandwidth and all existing systems are expected to transition to the narrower widths by 2005 or 2008 depending on the frequency band being used. We picked long transition periods to allow the users to maximize the service they could obtain from existing assets. NTIA has also restructured the way in which the 406.1-420 MHz band will be used to allow for more efficient operations maximizing user density. Although it has taken several years to complete planning to do this, all Federal agencies support with the resultant assignment efficiencies and are working on a plan to transition to this plan.

NTIA has authorized vendor-operated fee-for-service mobile systems in Boston, New York, Philadelphia, Baltimore, Washington and Norfolk. These have been very successful in Washington, moderately successful in New York and Philadelphia and largely unsuccessful in Boston, Baltimore, and Norfolk. We intend to further encourage the use of these efficient shared networks by encouraging and supporting the use of locally designed and controlled networks wherever possible.

II. SPECTRUM MANAGEMENT PROCESS IMPROVEMENTS

NTIA is also making progress to more efficiently conduct its management of Federal spectrum. To this end, we are increasing automation and reducing bureaucratic red tape in spectrum management.

Spectrum Management Processes

Federal government spectrum management involves three essential, closely-linked processes: (1) development of spectrum policy leading to rules and regulations that govern the use of spectrum and resolve spectrum management issues; (2) certification that spectrum will be available for planned radiocommunications; and (3) authorization of frequencies to satisfy current Federal agency operational needs. These are traditionally paper-intensive activities, and we are working hard to automate our processes, to make information more readily available and to make our frequency assignments more quickly. We want to reduce the amount of time it takes for a routine frequency assignment to mere minutes, and a complex assignment to at most three days, for a process that now can take as long as 15 or more days.

Frequency Authorization Process

NTIA processes between 6,000 and 10,000 frequency assignment actions monthly. These actions, applications from Federal agencies for new frequency assignments or revisions of existing assignments, must be coordinated with other Federal agencies, and in many cases with FCC and the Government of Canada, to ensure compatible operations with other radiocommunication systems. In addition, these actions include several hundred new assignment proposals each month submitted by the FCC on behalf of non-Federal activities, and by Canada, or coordination with Federal agencies, again to assure compatible operation between radiocommunication systems. NTIA processes all of these action requests via its Frequency Management Records System (FMRS) using computer workstations. This includes the use of over 720 automated procedures to process the actions, to validate information quality, to ensure compliance with spectrum allocation and assignment rules and regulations, and to verify international coordination requirements.

The processing of each day's actions submitted by the various Federal agencies, FCC and Canada, results in the compilation of an assignment action agenda which is sent to the 21 Frequency Assignment Subcommittee (FAS) for their review and coordination. Each member must provide their agency's position on each action (acceptance or table for cause) to NTIA electronically within 15 working days (essen-

tially voting). NTIA tabulates all votes on each action, and approves it or keeps it tabled depending on the tabulation of votes and NTIA's position.

The complexity of, and time requirements for, this processing and coordination procedure are increasing due to not only the constant growth in the number of stations authorized by NTIA (doubled since 1980), but also the number of non-Government stations in shared Government/non-Government bands being authorized by the FCC, as well the number of new stations being authorized by Canada that must be coordinated.

Records for NTIA-approved actions are placed in the NTIA-maintained Government Master File (GMF) of frequency assignments (or removed in the case of deletions). The updated GMF is provided to the Federal agencies monthly on CDROM.

The GMF data on the CDROM can be searched, selected, sorted, and printed on paper or exported to files through the use of a desktop or laptop computer. There are approximately 426,000 approved frequency authorizations in the GMF.

Within the last five years, NTIA, in partnership with the Department of Defense, developed the Spectrum XXI software capability for Federal agencies to: (1) prepare their applications for frequency assignment actions, (2) assess the action's compliance with NTIA rules and regulations, and (3) determine if the action would result in interference to other spectrum users. Over 250 persons within the Federal government have completed a one-week training course on Spectrum XXI. NTIA has also overhauled its frequency management records system by developing and implementing new software on state of the art work stations.

NTIA's goal for improvement is to provide a completely automated and electronically accessible (domestically and ultimately globally) central capability (E-commerce at the Federal level on a global basis) for the frequency management community to obtain approval of frequency assignment action requests within minutes for routine requests, to a maximum of 3 days for more complex requests.

Spectrum Policy Development and Issue Resolution Process

Federal radiocommunication policy development and spectrum issue resolution are largely based on the efforts of NTIA's Office of Spectrum Management with a very heavy reliance on the advice of the 20-member IRAC, which represents Federal spectrum users. The IRAC meets more than 200 times each year, and its subcommittees involve the exchange, reproduction, and distribution of over 100,000 pages of documents relating to Federal spectrum management and assignment of frequencies. We are working to reduce the massive paper load that accompanies such activity, and we recently awarded a contract to transfer IRAC documents from the past 78 years over to CD-ROM and onto computer servers.

Our goal in this area is to provide a completely computer automated and electronically-accessible capability (in essence, E-government) for the Federal spectrum management community to obtain information from the official IRAC policy development and spectrum issue resolution documentation.

Spectrum Certification Process

Both OMB Circular A-11 and the NTIA Manual require that every Federal agency developing a major radiocommunications system obtain NTIA certification that the spectrum required by the system will be available when the system is ready to be deployed. NTIA currently assesses spectrum availability for approximately 62 major, new Federal radiocommunications systems each year. For the most part, these systems are reviewed manually using document-based information processing techniques. This process takes an average of approximately 4 to 6 months to complete for each system.

NTIA's goal in this area is to develop an automated, electronically-accessible (domestically and ultimately globally) capability for the spectrum certification community to obtain, use, and provide all the necessary information to obtain approval of their system certification requests within the time frame of two months.

Overall Process Improvement Summary

If the Federal government can gain the efficiencies I described, it may be possible for these same type of improvements to be made on a national basis with the result of providing the needed spectrum for use by both the Federal government and private sector very quickly without bureaucratic delays of months and years and to share more spectrum based on sound technical grounds. This could essentially enable management of spectrum largely through the use of E-commerce techniques

The President's budget for FY 2001 requested $1 million ($200,000 via appropriations and $800,000 from reimbursement from the Federal agencies) for these improvements. This was the first leg of a four-year program to meet these goals. If the United States is to maintain its competitiveness in the marketplace and to make strides in closing the digital divide gap, the United States must improve its spec-

trum management processes and cut out the red tape and bureaucratic road blocks that inhibit timely distribution and sharing of spectrum for radiocommunications.

III. SPECTRUM OUTREACH

Now I would like to describe NTIA's activities in extending a helping hand to the public safety community.

All Hazards Roundtable

On July 17, 2000, NTIA, in cooperation with an inter-agency working group that works on public safety issues, hosted the All-Hazard Warning Roundtable. Dr. Jim Baker, administrator of the National Oceanic and Atmospheric Administration (NOAA), was a co-host at the event. The purpose of the roundtable was to bring together representatives of existing systems, such as NOAA with its weather radio, with representatives of new and emerging technologies, including the Internet and wireless products, as well as reverse 9-1-1 systems, to see how our already excellent warning system can be improved. I viewed the roundtable as the start of a process that will bring government and industry together to talk about creating a more comprehensive warning network.

The event was an overwhelming success as all the panelists agreed that more needs to be done in order to provide effective and immediate warnings. Follow-up meetings will take place so that substantive and technical issues can be discussed so that hazard warnings may be widely available to the public through various existing and emerging telecommunications technologies. The roundtable is the latest activity of the informal inter-agency group that was organized last year until Vice President Gore's National Partnership for Reinventing Government. The working group published a report, "Saving Lives With An All-Hazard Warning Network" that found NOAA Weather Radios forms the backbone of an all-hazard system. However, we found that we must improve access to warnings and make warnings themselves better.

Federal & State Joint Project

One of the more pressing needs of all radio services in terms of radio spectrum is for the public safety services. The inability of agencies from the Federal Government to talk to state and local counterparts in times of emergencies and natural disasters is a paramount concern. NTIA has recently put forth plans to designate certain federally allocated radio frequencies for use by Federal, state and local law enforcement and incident response entities to improve their communications during emergencies and help them to better respond to threats to public safety. This new plan is the first step towards ensuring that sufficient radio spectrum is available when and where an emergency or public safety need may arise. The plan was developed in cooperation with the IRAC and the Federal Law Enforcement Wireless Users' Group (FLEWUG). It provides a total of 40 radio frequencies, under the control of the Federal Government, to be used for intermittent law enforcement and incident response requirements during emergencies relating to public safety.

In another example of Federal-state cooperation, NTIA, working with the Department of Defense, authorized the state of Wisconsin to use Federal radio frequencies to test a shared land mobile communications system that will greatly ease communication during emergencies as well as during day-to-day communications. There are a number of land mobile systems currently operated by Federal agencies or by State and local governments around the country that provide communications during emergency operations to all levels of government. To further promote this capability, the NTIA, working with the Departments of the Treasury and Justice jointly sponsored Public Safety Wireless Network (PSWN) Program, have initiated a number of pilots throughout the country to test and evaluate various interoperable solutions among all levels of government. Although there are many emergency land mobile systems, the Wisconsin Pilot project is the first system providing shared services on a day-to-day basis. However, with the continued efforts of the NTIA and the FCC, working with the PSWN Program, it is anticipated that future shared systems and programs will be more readily available.

National Coordination Committee (NCC)

The National Coordination Committee (NCC) was established by the FCC to solicit input from the public safety community in the further development of rules governing the new 700 MHz public safety band, particularly in regard to interoperability. NTIA actively participates in the NCC by offering advise and subject matter expertise on issues directly related to the NCC. NTIA, together with the U.S. Department of Justice (DOJ), the Federal Emergency Management Agency (FEMA) and the U.S. Department of Treasury co-sponsor the NCC. Participation is vital to

ensure that interoperability between Federal, State and local responders is achieved.

IV. PROMOTION OF NEW TECHNOLOGIES

The Federal government uses a minimum amount of spectrum as possible to perform its existing and planned mission needs. Every Federal agency must determine if its radiocommunication requirements can be satisfied by the private sector before they develop their own radiocommunications. It is critical that the Federal government have sufficient spectrum to meet all its obligations to the American people including national defense, law enforcement, resource management control, air traffic control, and any other safety-of-life services. The Federal government has been very successful in using new technology in developing its radiocommunications and conserving spectrum.

In my judgement, one of the most important things I can do in my capacity at NTIA, is to get the Federal agencies and the private sector to engage in a constructive dialogue. It is imperative—as a nation as a whole and from the individual perspectives of Federal agencies and the private sector—that a cooperative relationship exist between the government and private sectors be realized.

WICI

One initiative I started at NTIA earlier this year is to establish the "Wireless Innovations in Communications Initiative" to promote spectrum efficiency and innovation and to create a dialogue between the Federal government agencies and the private sector. The Federal agencies, considered collectively, are a large user of communication services in the United States. Although many of these services are provided by commercial providers through government contracts, the Federal government continues to own and operate significant communications facilities that perform certain mission-critical functions. Federal agencies use the radio spectrum to operate the wireless portions of these Government-operated communications facilities. Because of the growing public and private sector requirements for spectrum, there is an urgent need to ensure that this limited national resource is used effectively and efficiently.

One of the objectives of the WICI is to promote innovative developments in communications technologies and facilitate their timely application to satisfy actual communication needs by both the Federal agencies and the private sector. The scope of this initiative extends across the full range of wireless communications technologies, including fixed, mobile, radar, navigation, and satellite communications. The approach planned for conducting WICI was to establish a committee (WICI Committee) within the Interdepartment Radio Advisory Committee (IRAC) comprised of senior experts in the Federal government who understand their agency's radiocommunication requirements and can envision the potential applicability of new technologies. The WICI Committee has scheduled a series of meetings in which representatives from Federal agencies discuss their communications requirements. In addition, private sector developers of communication innovations present their ideas on how to satisfy the Federal agencies' requirements. WICI is intended to promote the development of innovations in wireless communications and systematically examine their applicability to actual communications requirements.

Six meetings of the WICI have taken place since the initiative was begun in March of this year. The focus of these first meetings have been on land mobile communications, specifically software defined radios and public safety communications. Following the presentations by Federal agencies, 8 major private sector developers have come forward and have explained their new technologies that address the requirements described in the Federal briefings. Other areas such as satellites and radar will be addressed in the future. The spectrum management process will also be discussed with the private sector as well.

I hope that over time, this initiative will foster better cooperation between government and private sector in spectrum management. I believe that we can do more to assist Federal agencies to more efficiently meet their communications needs and to promote continued innovation of wireless technologies. The purpose of the WICI is to point us in a new direction with respect to spectrum management.

New Technologies

NTIA is very interested in helping advance the development of new wireless technologies that will create efficiency and opportunity. One example is ultrawide band (UWB).

UWB transmits very low power radio signals with very short pulses, often in the picosecond (1/1000th of a nanosecond) range using very wide signal bandwidths. Because of that combination of characteristics, UWB has shown promise for many com-

mercial applications, including wireless communications within buildings and the locations of objects on the other side of walls or other barriers. UWB will be using the same spectrum that is presently being used by conventional radiocommunication devices, including emergency services. As a result, it will be important to ensure that there are no adverse effects from UWB to these critical services.

The FCC, in coordination with NTIA, has granted waivers for three UWB manufacturers. This has enabled limited production of these devices until more permanent rules can be established and appropriate measurements and analysis can be made to determine the technical feasibility of sharing spectrum.

NTIA has begin a comprehensive test and analysis program that will be carried out jointly by NTIA's Office of Spectrum Management in Washington and our Institute for Telecommunication Sciences in Boulder, Colorado. This program will determine from a technical and engineering point of view, the conditions under which UWB technology can be integrated in the spectrum environment ensure compatible operation with existing safety-of-life systems including those used or planned for air traffic control with special attention to the Global Positioning System (GPS). NTIA will be spending approximately $1 million for this effort which is to be completed in the fall of this year. This testing program will also help the FCC, which recently proposed new rules allowing UWB systems on an unlicenced basis.

V. WRC-2000

The WRC—General

I would like discuss briefly the results of the World Radiocommunication Conference 2000 (WRC-2000) which was held in May in Instanbul, Turkey. The National Telecommunications and Information Administration (NTIA), along with the Federal Communications Commission (FCC) and other Federal agencies provide the main technical support for the United States delegation at World Radiocommunication Conferences. Given the gravity of the issues involved at WRC-2000, NTIA considered this year's conference among the top priorities of the agency this year. The outcome of this past conference, as with previous conferences, affect significantly on spectrum management and the development of wireless communications services in the United States, and the competitive position of U.S. manufacturers. Therefore, conference preparation and follow-up is a responsibility that NTIA takes very seriously.

I spent a week and a half in Istanbul with the 157 member U.S. delegation (including 59 representatives from companies) to the WRC-2000. There were over 2000 delegates from over 150 countries—each working to ensure that their existing uses of the spectrum for their radiocommunications would be protected and that their future requirements for the spectrum would be satisfied. Countries were also attempting to agree on new rules or modifications to existing regulations and procedures required to ensure compatible operation. I had the opportunity to talk to members of many delegations to promote the U.S. views and to listen to their views on the many issues being addressed at the WRC. It was apparent that both developed and developing countries had definite views on: (1) obtaining additional spectrum for implementing International Mobile Telecommunications 2000 (IMT-2000) and future generations of advance communications; (2) allocating sufficient spectrum for GPS and the European Galileo satellite-based worldwide navigation systems; and (3) ensuring appropriate distribution of spectrum for broadcast satellite services.

Developing countries were particularly interested in obtaining guaranteed future access to satellite spectrum which the developed countries have almost fully occupied over the last 30 years. The developing countries were very concerned that as technology opened the doors for broadband communications, they would fall in the shadows of this economic boom and communications expansion—exacerbating the economic and digital divide that currently exists between developing and developed countries. They expressed concern that both the economic gap and the digital divide would continue to grow. Moreover, they feared being forced to set aside spectrum for new broadband systems and to transition equipment infrastructure when their first generation cellular was still developing. Many developing countries still appear to be slow to adopt regulatory reform needed to facilitate communications investment. Developing countries are also as concerned as we are in the Administration about the digital divide. It is safe to say, that wireless communications technologies are taking on a greater importance in most nations, including our own, and are viewed as a critical means to expanding economic opportunity.

It was a privilege and an honor to work with Ambassador Gail Schoettler and members of the U.S. delegation. Her outstanding leadership, along with the outstanding effort by the delegation members, was paramount to the success of the United States. I would also like to express my admiration for the cooperation be-

tween NTIA, FCC, State Department, and the industry members of the delegation. In my estimation and based on discussions with others that attended previous conferences, this was one of the most productive. I would also like to bring to the attention of the subcommittee, Ambassador Schoettler's report, in which a number of recommendations were made to improve future conferences. Among other things, she points to the importance of WRC preparations starting early and maintaining continuity of leadership and organization from conference to conference and that communications between industry and government and within the delegation, with the press and with Congress, should be open and timely. Finally, she recommends that a strong and continuous international outreach program should be undertaken—something that Ambassador Schoettler did well prior to the WRC and which we need to be certain to follow up on. As a nation, the United States needs to take these conferences very seriously in order to continue the United States' leadership role in the ITU and subsequent WRCs, and maintain an open and free market place.

WRC—Major Issues for Federal Government

The major issues at the WRC included: (1) Broadcasting Satellite Service (BSS) re-planning, technical and procedural matters; (2) International Mobile Telecommunications 2000 (IMT-2000); (3) Non-Geostationary Orbit and Geostationary Orbit (NGSO/GSO) spectrum sharing; (4) Radionavigation Satellite Service (RNSS) issues including GPS sharing with Mobile-Satellite Service (MSS); and (5) high density fixed systems (HDFS). The United States met all its objectives in these major areas including sufficient spectrum for IMT-2000, protection of U.S. communication and radionavigation systems, agreement that mobile satellite service cannot share with GPS, and sufficient spectrum for GPS and other planned satellite navigation systems.

I would like to focus my remarks with respect to WRC-2000 on implementation of IMT-2000 since NTIA will be playing a pivotal role in this process. And, I would say at the outset that, in my judgement, the development of advanced wireless services is one of the most important communications policy issues facing our nation. The Internet revolution will take yet another dramatic leap when we, hopefully, have widespread availability to mobile Internet access. I consider the development of wireless Internet critical to achieving important policy goals such as closing the digital divide.

VI. DEVELOPMENT OF WIRELESS TECHNOLOGIES AND SERVICES

Transition to IMT-2000

Over the past decade, there has been enormous worldwide growth in the use of cellular-type wireless communications systems. Many countries initially introduced analog systems and have now transitioned to digital systems. Studies in the International Telecommunication Union (ITU) and elsewhere indicate that this growth in personal communications is likely to continue. Third generation (3G) wireless communications systems will provide mobile and satellite-based broadband capabilities, and represent a path for the evolution of existing cellular and personal communications services (PCS). Annual service and infrastructure revenue for 3G is estimated to approach $100 billion by 2007, of which two-thirds is predicted to come from data and other non-voice services. It has also been estimated that wireless subscribers are projected to grow from 469 million in 1999, $1 billion in 2002, and 1.26 billion in 2005 or an average penetration rate of nearly 20 percent. The United States cannot afford to get left behind in this technological leap forward.

The member administrations of the ITU have identified the technical characteristics of a third generation system, and have termed it International Mobile Telecommunications-2000 (IMT-2000). Key features include a high degree of commonality of design world-wide; compatibility of services within IMT-2000 and other fixed networks; and high-quality world-wide use and roaming capability for multimedia applications (e.g. video-teleconferencing and high-speed Internet access). The ITU established an agenda item for WRC-2000 which considered the review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum, particularly for the terrestrial component of such applications and to make adjustments to the Table of Frequency Allocations as necessary.

Let me briefly review the IMT-2000 WRC-2000 results.

IMT-2000—U.S. WRC Results

In accordance with U.S. goals and the concerns of the developing world, the outcome of the conference provides direction to facilitate technology development but also emphasizes flexibility for administrations. The conference adopted various types of regulatory text for implementation of IMT-2000 in a number of bands. These in-

clude bands for the terrestrial component of IMT-2000: 806-960 MHz (some countries noted that spectrum was available in their countries as low as 698 MHz, but most felt uneasy about including existing broadcast bands), 1710-1885 and 2500-2690 MHz. For the satellite component the bands included 1525-1544, 1545-1559, 1610-1626.5, 1626.5-1645.5, 1646.5-1660.5, 2483.5-2500, 2500-2520, and 2670-2690 MHz. The Conference also approved High Altitude Platform Stations (HAPS) operations in portions of the bands 1885-2025 and 2110-2200 MHz. The language in the various regulatory texts is different, however the meaning is the same, maximum flexibility for implementation. This regulatory identification for IMT-2000 does not preclude the use of these bands for any applications of the services to which they are allocated and does not establish priority in the Radio Regulations. For the new bands above 1 GHz, a significant amount of language was accepted by the Conference that makes it clear that administrations can implement any of the bands in any time frame, for any service or technology, and may use any portion of the bands that they deem appropriate based on national requirements.

In summary, the WRC-2000 identified 519 MHz of additional spectrum for terrestrial (plus 230 MHz from WARC-92), totaling 749 MHz of spectrum for IMT-2000. It should be noted that the International Telecommunication Union (ITU) Radiocommunications Bureau only forecasted a need of 160 MHz of additional global spectrum for terrestrial by 2010, exclusive of frequency bands already used for first and second generation systems. It is up to each nation to decide which bands will be adopted for IMT-2000 in their country. Administrations can implement any bands in any time frame, for any service or technology, and may use any portion of the bands that they deem appropriate based on national requirements.

The United States won a very significant victory at WRC-2000 in that the conference adopted our plan to utilize a multi-band approach and provide administrations with flexibility to develop 3G technology. This approach provides enough guidance with respect to which band will be 3-G bands while permitting market-place flexibility.

IMT-2000—The Domestic Scene

The real work is about to begin domestically. The United States must now decide what bands or portions thereof will be allocated or reallocated for IMT-2000 use domestically. The possibilities for terrestrial include 698-960, 1710-2025, 2110-2200, and 2500-2690 MHz. NTIA and the FCC agreed before the WRC-2000 to perform studies for the 1755-1850 MHz band (NTIA) and for the 2500-2690 MHz band (FCC). The studies are to examine, among other things: existing spectrum allocations; existing use; existing investment; future use; potential availability of alternate spectrum for potentially displaced users, changes in the domestic allocation table, cost and time frame to move existing users; sharing potential of existing users with IMT-2000 services and the possibility of existing users in 2500-2690 MHz band providing IMT-2000 services. The satellite component possibilities include the use of 1525-1559, 1610-1660.5, 2483.5-2500, 2500-2520 and 2670-2690 MHz bands. Bands are not as congested in most other countries. Most European countries and Japan are licensing 3G operators now, who will begin services in 2002.

The 1755-1850 MHz band supports four main Federal functions: space telemetry, tracking and control (TT&C); medium capacity fixed microwave; tactical radio relay training; and aeronautical mobile applications such as telemetry, video and target scoring systems. This band is allocated on an exclusive basis to the Federal Government for fixed and mobile, space operation (Earth-to-space) and space research (Earth-to-space) services, and in the 1761-1842 MHz portion, used for space tracking, telemetry and command. Fixed links are operated by Federal agencies for voice, data, and/or video communications where commercial service is unavailable, excessively expensive, or unable to meet required reliability. Applications include law enforcement, emergency preparedness, support for the National air space system, military command and control networks, and control links for various power, land, water, and electric-power management systems. Other specified fixed links include video relay, data relay, and timing distribution signals. Probably the most critical system in the band is the USAF Space Ground Link Subsystem (SGLS). This system, via Earth-to-space uplinks in the 1761-1842 MHz band, controls the U.S. military satellites, including telecommunications satellites, intelligence gathering satellites, the Global Positioning System (GPS) satellite constellation, and satellites of other Federal government agencies and U.S. allies.

The two major services in the 2500-2690 MHz band are the Multichannel Multipoint Distribution System (MMDS), and the Instructional Television Fixed Service (ITFS).

MMDS is a public radio service transmitting from one or more fixed stations, and received by multiple receivers at various locations. There are over 2500 licenses for

MMDS in the band, nation-wide. Licenses are granted on the basis of Basic Trading Areas (BTAs). MMDS is a technology for delivering fixed wireless high-speed access. Until recently, the incumbent local telephone companies and local cable systems—both wired services—have offered the only options for mass market high-speed access. The MMDS frequencies, located in the 2.1 and 2.5-2.7 GHz bands, are suited for the delivery of broadband access to data, voice and Internet service. The channels allocated to MMDS have traditionally been used to provide a multichannel video programming service, so-called "wireless cable," that is similar to cable television. Rather than being hardwired, MMDS uses microwave frequencies. Like broadcast television, MMDS is transmitted from a broadcast tower, usually located on a mountain or tall building, to special antennas on residences or businesses throughout a local market. The technology is, however, undergoing rapid changes. In September 1998, the FCC announced new rules which allow two-way service via MMDS frequencies. When MMDS can be used for two-way service, it will become a viable broadband service delivery option. The two-way capability allows a return channel, so MMDS can be effectively used as a wireless option for interactive applications and two-way data service. The new rules still contemplate fixed service, even for two-way operations.

The other major service in the band is the ITFS, and is regulated under Part 74, Subpart I of the Commission's Rules. ITFS is used for television transmission of academic subject matter to remote classrooms, or other locations. ITFS channels are from 2500 to 2596 MHz, and interleaved with MDS channels above 2644 MHz. Of the 31, six-megahertz channels in the MMDS/ITFS spectrum band, the FCC licenses twenty of these channels to non-profit educational entities. The channels are used by educators for instructional programming, and unused channels may be leased to MMDS operators, and can be used for the same kind of broadband services discussed above. Partnerships have developed between ITFS spectrum holders and MMDS companies that provide expertise, revenue, and access to hardware and software to ITFS partners, to better enable them to build their distance learning programs.

All of the above bands are used at present. Incumbent users in these bands have objected to having their operations moved, because of cost, effects on mission/business plans, and the interruption of day-to-day activities. However, if the United States is to be competitive in the marketplace for succeeding generations of wireless communications, the United States will have to make the appropriate decisions that will make the necessary spectrum available while minimizing the effects and costs to those who may have to be displaced. For those who may be required to relocate, additional spectrum may have to be found or other accommodations will have to be made to continue their operations.

Addressing all the issues in selecting a band or bands and potential relocation of those displaced will require cooperation and collaboration between the Federal government agencies, the NTIA, industry, and the FCC. To this end, the Administration believes it imperative that the U.S. spectrum regulators (FCC and NTIA) and major stakeholders agree to a schedule of events that will result in spectrum for IMT-2000 being designated for use by September 30, 2002, which coincides with Congressional direction that the FCC auction the 1710-1755 and 2110-2160 MHz. The major ingredients to meet this goal will be completion of the spectrum studies by the FCC and NTIA as discussed above, timely coordination between the FCC and NTIA including the Federal agencies and industry stakeholders affected, and the expediency of the FCC rule-making process.

The United States also has to focus on of what other countries are doing. For example, most PCS users in the United States cannot take their phones to Europe and use them since PCS systems in the United States use incompatible technologies. U.S. GSM users can roam to Europe. Therefore, other countries planned use of spectrum for IMT-2000 could have an effect on frequency bands the United States may choose or on the need for manufacturers to expand the use of multi-band, multi-technology equipment. However, industry is very concerned about the impact this will have on the affordability, features, and size of equipment, particularly if the United States is unable to harmonize frequencies with the rest of the world. The United States has stood firmly behind the concept of technology innovation and flexibility in the past, while Europe has been very successful in promoting single bands and single technologies.

Another aspect of this decision, is the impact the spectrum selection will have on the digital divide, the gap between those individuals and communities that have access to these Information Age tools and those who don't. NTIA's "Falling Through The Net" report in July 1999 indicated that better-educated Americans are more likely to be connected to the Internet, whites are more likely to be connected than African-Americans and Hispanics, wealthier schools are more likely to be connected

than poorer schools, and people with disabilities are less likely to have access to technology. The United States will have to evaluate the impact of decision options on the gap and hopefully make decisions that will close the gap.

The Administration intends to engage in a serious inter-agency process, working cooperatively with the private sector, to identify aggressively particular spectrum and develop 3G wireless services. NTIA will lead this process on behalf of the Administration and we will regularly inform the Congress on the progress of our efforts.

CONCLUSION

Thank you for this opportunity. I will be happy to answer your questions.

Mr. TAUZIN. Thank you, Mr. Rohde.

The Chair is now pleased to welcome Mr. Tom Sugrue for your prepared testimony.

STATEMENT OF THOMAS J. SUGRUE

Mr. SUGRUE. Thank you, Mr. Chairman, Congressman Markey, members of the panel. It is a pleasure to be here today. I appreciate your invitation to talk about spectrum management matters at the FCC.

I would also like to introduce Dale Hatfield who has already had a opportunity to speak. I am sure I speak for Dale in saying we are honored to appear on this distinguished panel.

We didn't realize how distinguished it was going to be at the time, but with Assistant Secretary Rohde and U.S. Coordinator Lee, both Dale and I at earlier stages of what are now somewhat extended careers, served at deputy administrators at NTIA.

I know we continue to have a great deal of respect and admiration for those organizations and their current leaders here today.

Mr. Chairman, it should be obviously to all that wireless services play an increasingly important role in the lives of all Americans.

For example, I would bet that most people in this hearing room are carrying a wireless device, although I hope they have turned them off so as not to detract us during this fine testimony.

Mr. TAUZIN. Me, too.

Mr. SUGRUE. But wireless services are truly ubiquitous. They are really everywhere. Mr. Chairman, with your indulgence, permit me to tell you briefly about my experiences just this morning to illustrate this point.

Let's call it the eight encounters or a wireless kind. First, I woke up this morning to music coming from my clock radio which was sent to me by an FM broadcasting spectrum.

As I got up I turned on the television to catch one of the morning talk shows. FCC rules prevent me from telling you which one. But that was broadcast using VHF television broadcast spectrum.

Third, on that show they were conducting an interview with someone in a foreign country being carried live over a satellite feed, using international satellite spectrum.

Fourth, the TV show switched to a weather report showing digital Doppler images from the National Weather Service using federally allocated spectrum.

Fifth, as I drove out of my house I used my remote garage opener to close the garage door, using Part 15 Unlicensed radio spectrum.

Sixth, while driving away, I passed the utility company employee who was engaging in remote meter reading, no doubt using Itron

technology, fortunately, not out of business yet, using possibly private allocated spectrum in the MAS band.

Mr. TAUZIN. Did it interfere with your heart monitor?

Mr. SUGRUE. My pacemaker has been racing all morning.

Seventh, while driving to work I used my own cell phone. I want to make a point that I used it very carefully, with its speed dial, hands-free operation, on the way to work to speak with my secretary, using 800 MHz cellular spectrum.

Eighth, the taxicab driver on the way here was using his radio to speak with his dispatcher to confirm the pickup and get assigned his next fare using SMR or private mobile radio spectrum.

Eight wireless experiences, and all before 10 o'clock in the morning. The point of this is not only to illustrate how prevalent these services are in ordinary life, but also to emphasize that these are wonderful technologies that are so valuable because they serve real human needs.

We who work in the field can sometimes get so involved in our discussions about MHz and GHz, about TDMA and CDMA or whatever, it is easy to lose sight of the fact that real people use these services.

Wireless technologies and services have a direct impact on people's ability to do their jobs efficiently, on the flow of information, on the provision of safety services, and on the overall quality of life of our citizens.

Mr. Chairman, spectrum management is a major regulatory function of the FCC. Our written statement outlines our activities in that regard. But I would like to just turn the balance of my oral statement to address our spectrum cap policies which are the subject of a bill that Congressman Stearns and others on this committee have introduced.

This bill would eliminate the caps, spectrum cap for CMRS spectrum auctioned in the future and for any licenses transferred thereafter.

By my reading, the goal of this bill is to preserve a fully competitive market for CMRS services while at the same time assuring that carriers have access to enough spectrum to deploy innovative advance services. On that goal, I can assure you, Congressman Stearns, we are in vehement agreement.

The FCC's cap applies to CMRS spectrum and provides that no carrier can have more than 45 MHz in any single market, thus ensuring at least four competitors in each market. The purpose is to promote competition. I think the growth of competition in this industry has been a great success story for consumers.

I have a couple of charts to illustrate that. This first one looks, I am sure, like a picture of nothing. But what it is is a picture of the state of competition in CMRS services just 5 years ago at the end of 1994.

I asked the staff to develop a map that showed the areas that had markets with more than two providers as of that date. It came back with nothing on them. There was nothing. This was a tight, government-sanctioned duopoly from sea to shining sea.

Two years later Congress and the FCC working together had taken action to auction new spectrum for CMRS services and we

were beginning to see the first signs of competition but still in a very few areas. This is the end of 1996.

Three short years later, now the map of competition has converted to this rainbow of colors. There are many markets with six and seven providers and more than two-thirds of subscribers have access to five competitors that can provide them service.

The benefits of this outbreak of competition in such a short period of time are sort of summarized in the last chart. We call this our up and down chart. All the things in this industry that you would like to see going up are going up, subscribership up 400 percent, jobs 300 percent, investment 400 percent in 6 years. Bills and prices going down and the wait for licenses has been cut by a third.

Mr. Chairman, I see the light is on. I just want to end up and say we think our spectrum cap policy has contributed to this. We are interested in working with you and Congressman Stearns on ensuring that our goals of competition in the future and a robust industry are realized. Thank you.

[The prepared statement of Thomas J. Sugrue follows:]

PREPARED STATEMENT OF DALE N. HATFIELD, CHIEF, OFFICE OF ENGINEERING AND TECHNOLOGY & THOMAS J. SUGRUE, CHIEF, WIRELESS TELECOMMUNICATIONS BUREAU, FEDERAL COMMUNICATIONS COMMISSION

Spectrum management is a core responsibility of the FCC, which has taken on heightened importance under Chairman Kennard's leadership. Spectrum is a finite and valuable national resource. Management of this scarce resource has become increasingly complicated over recent years. Explosive growth in new wireless services has stimulated demand. We are pleased to discuss spectrum management with the subcommittee today.[1]

Rapid advancements in radio technologies in recent years, particularly in the areas of integrated circuitry, signal processing and digital systems, have led to the development of a wide range of new radio communications technologies. The advent of these new technologies has been accompanied by increased demand for spectrum to permit the operation and growth of new radio services. These new services have included, for example, the personal communications services (PCS), advanced paging systems, intelligent transportation services (ITS), mobile satellite services (MSS) and two-way multichannel distribution service (MMDS) operation.

Today, we simply do not have enough spectrum to give everyone all that they want. This increasing demand is being propelled by a host of developments including the growing shift of our economy towards the service sector, the increasing mobility of our workforce, and the convenience and increased efficiency produced by mobile/portable communications combined with improved performance and falling cost of wireless devices. Increasing requirements for public safety and for national defense systems, satellite services, private users, amateur radio, and the dramatically growing interest in accessing the Internet are compounding the shortages of spectrum.

In today's highly competitive environment, our biggest job as spectrum managers is to find ways to avoid a spectrum drought that constrains the development of new technologies. The challenge we face is how to balance competing demands for scarce spectrum while striving to promote competition through the deployment of new technologies and services while ensuring that the public interest is best served.

Competition in the Wireless Marketplace

The FCC, consistent with the direction of Congress, is responding to the explosion of wireless demand by managing the spectrum, to the highest extent possible with a market-oriented approach. When Congress created the Commercial Mobile Radio Services (CMRS) in the 1993 Balanced Budget Act, it was with the mandate that the Commission should facilitate regulatory flexibility and promote market entry when writing its rules. This was based upon the belief that, in such an environment,

[1] The comments and views expressed in this Statement are offered in our respective capacities as Chief of the Office of Engineering and Technology and as the Chief of the Wireless Telecommunications Bureau and may not necessarily represent the views of the Commission or the individual FCC Commissioners.

the commercial wireless industry would develop into a vibrant marketplace known for innovation and intense competition.

In order to remain abreast of how commercial operators' business plans were unfolding, Congress has required the Commission to provide annual updates on the status of competition in the CMRS industry. This coming report, the fifth such one, will show that significant progress continues to be made towards Congress' goals. Competition continues to develop in the mobile telephone industry. Just five years ago, consumers could choose from only two cellular carriers, which generally offered service on a local or regional basis and engaged in very limited, if any, competition for price, service packages, or quality. Today, nearly three-quarters of the U.S. population lives in areas where five or more mobile phone carriers are competing to offer service. More people are subscribing to mobile phone service every year, prices are falling, and subscribers are using their phones more often. In addition, six carriers have acquired extensive footprints and are offering their customers service packages that allow them to make calls from almost anywhere in the country without incurring roaming charges. Moreover, not only is mobile telephone service an emerging competitive alternative to wireline telephone service, it is an extremely valuable service in its own right, as more wireless subscribers choose their mobile telephone as their only telephone.

The past year has also seen significant developments in the emerging mobile data sector. Mobile telephone and other wireless carriers have begun to offer mobile data services such as Internet access. Many have also announced their plans to migrate to third generation (3G) networks so that they can offer these services at faster speeds. The paging industry is positioning itself as a competitor in the mobile data market by offering two-way, advanced services such as email and Web content updates. In addition, new protocols and technologies are being developed that will facilitate the growth of mobile data in the years to come.

3G and the WRC

Today, the next generation of mobile wireless services will likely include capabilities for multimedia applications and a wide range of services, in addition to voice, such as video-teleconferencing, high speed Internet, and high data rate offerings.

A major step forward for the next generation of wireless services was taken recently at the World Radio Conference (WRC) sponsored by the ITU in Istanbul in late spring 2000. The nations of the ITU have agreed to the identification of additional spectrum bands for possible use by IMT-2000. WRC-2000 adopted an approach based significantly on the multi-band, flexible approach to identifying spectrum for wireless services originally nurtured and fostered in the U.S. In the wake of the recent identification of multiple bands for IMT-2000 by the international community, the U.S. is evaluating whether additional spectrum could, or should, be made available for 3G services and other advanced mobile communications services in the United States. This task presents a major challenge to the FCC and the other parts of our government involved in these studies since all of the additional spectrum identified at WRC for 3G services is heavily encumbered in the United States. We hope that our efforts to make spectrum use more efficient and to make more spectrum available for new services will ensure that consumers needs are met both inside and outside the government.

Overview of Spectrum Management Principles

Spectrum is a valuable and finite public resource that must be allocated and assigned in a manner that will provide the greatest possible benefit to the American public. Consistent with the FCC's statutory obligations, we view our mission as ensuring that the radio spectrum is used efficiently and effectively. One of our principal jobs is to help to define policies that maximize the efficient use of the spectrum and promote the introduction of new services and technologies.

There are four major functions in spectrum management: allocation, service rules, assignment, and compliance/enforcement. The allocation of spectrum for particular uses and the development of specific technical and service rules governing those allocations is a crucial determinant of industry structure and performance. The means by which we assign spectrum is a critical factor in stimulating competition. Finally, our rules are only effective if we have a means to enforce compliance.

Over time, technological advances, growth in user demand, and the finite nature of spectrum have made our spectrum management responsibilities increasingly complex. To address the continuing growth of demand for radio services, we have focused our approach to spectrum management on allowing spectrum markets to make more efficient use of frequency bands through new technologies and on increasing the amount of spectrum available for use. In addition, we have sought to encourage the development and deployment of new, more spectrum-efficient tech-

nologies that will increase the amount of information that can be transmitted in a given amount of bandwidth and to allow greater use of the spectrum occupied by existing services wherever possible.

We would like to briefly highlight the four major spectrum management initiatives currently underway at the commission.

(1) *First, flexibility is increasing.* We are seeking to promote flexibility in our spectrum allocations, *i.e.,* less restrictive service rules and harmonized rules for like services, in order to allow licensees to respond better to demand from customers.

(2) *Second, is the development of new technologies.* We are fostering the development of new spectrum efficient technologies such as Ultra-wideband (UWB) and Software-Defined Radios (SDR). This spring, we issued an NPRM on UWB and an NOI on SDR. Ultra-wideband (UWB) technology may offer us a wonderful opportunity to use spectrum more efficiently. This technology appears to be able to operate on spectrum already occupied by existing radio services without causing interference. SDR is a new generation of radio equipment under development that can be quickly reprogrammed to transmit and receive on any frequency within a wide range using virtually any transmission format. This new technology could change the way users can communicate across traditional services.

(3) *Third, is promoting the use of higher frequencies.* We are stepping up our efforts to explore the use of higher frequency spectrum. Just last week we convened a public forum to explore opportunities at the 90 GHz band. Until recently, the commercial viability of equipment at this high a level was not feasible. Use of higher frequency spectrum may mitigate the congestion in high demand bands under 3 GHz.

(4) *And fourth, is the development of secondary markets.* We are exploring ways that the Commission can encourage more active secondary market trading in spectrum similar to what currently occurs in wireline bandwidth. Available capacity could be "leased" on a temporary basis to meet short or medium term demand for particular services. Such arrangements have tremendous potential for all of the parties involved. The lessor could gain revenues while maintaining control of spectrum that they feel is needed to meet their long-term strategic objectives. The leasee would be able to make a profit by providing services to otherwise under-served customers. Consumers would benefit from the availability of the service and manufacturers would benefit by the sale of more products. We, as regulators representing the public, would benefit from the greater and more efficient use of the spectrum resource that we have been charged with managing in the public interest. We convened a public forum in May with a broad range of representatives from industry and academia to gain insight into why there has not been active secondary trading and how the FCC could facilitate such activity. We are currently reviewing the results of the forum and gathering additional information and ideas. We hope to follow this effort with a more formal proceeding.

These initiatives represent a balanced approach that will help the Commission to meet the demand of new users. We cannot allow spectrum to constrain competition in new mobile services. We must be innovative and aggressive in using spectrum more efficiently and making more spectrum available.

Auctions as an Efficient Assignment Tool—two examples

The primary tool used by the FCC to assign spectrum is our highly successful competitive bidding program. Since Congress gave the FCC the authority to conduct auctions late in 1993, we have seen wireless competition explode. Our experience with auctions has shown that Congress' decision to authorize this approach to assigning licenses was a sound one. The FCC auctions thousands of licenses each year with great success. Assignment through auctions has also proven to be the quickest method the Commission has used in putting licenses into the hands of those who value them most. Auctions have promoted the entry of new companies into telecommunications markets and stimulated the development of innovative wireless services. We have led the world in demonstrating that an efficient, transparent spectrum auctions process can work. The FCC has won awards and recognition worldwide for its innovative computerized simultaneous multiple round auction design, which allows large numbers of licenses to be auctioned at one time. In the United States, we have a number of major auctions planned in the coming months.

700 MHz

First, we have scheduled an auction of 36 MHz in the 700 MHz band for this fall. This is the television Channel 60-69 analog spectrum that Congress mandated the broadcasters return, after a transition period, in exchange for being given new spectrum for digital television. Our approach to this band illustrates the FCC's thinking

in the spectrum management area, and also demonstrates how difficult it can be to translate theory into consumer benefit.

The bandwidth available is highly valuable "beach front" property. It is well suited for a number of highly valuable uses, including high speed fixed Internet access that could compete with DSL and cable modems in the residential market, as well as high-bandwidth mobile services. We are all well aware that our decisions on the service rules for a new band like this affect who bids in the auction. We try to make our rules as technology-neutral as we can, and to let the market decide how licenses should be aggregated and which services will be the highest valued uses.

In response to the record, we created two licenses each in six different regions. We also allowed licensees to aggregate their licenses within a region. So, we might see aggregation within a region to provide fixed wireless, *i.e.,* Internet access, or geographic aggregation to provide mobile wireless. We recognize that even an auction which offers this much flexibility might still present challenges to potential bidders to obtain the spectrum they need to fulfill their business plan. So we are continuing to explore improved auction designs that would allow for bidding on packages of licenses, *e.g., combinatorial bidding.* With package bidding, bidders would not be restricted to placing bids on individual licenses, but would also be allowed to place all-or-nothing bids on packages of licenses. This approach would allow bidders to better express the value of any synergies that might exist among licenses and to avoid the risks bidders face in trying to acquire efficient packages of licenses. The FCC was instructed by the Congress in the 1997 Balanced Budget Act to test this licensing approach.

Also, with six megahertz of this spectrum we are testing a new concept called "guard band managers." Guard band managers will manage spectrum that buffers and protects adjacent public safety spectrum in the 700 MHz band. At the same time, they will serve as a useful market experiment because they will need no additional license authority to lease the spectrum to third parties, and will be able to respond to the ebb and flow of the market.

C/F Block

Another major upcoming auction involves some significant C and F block PCS licenses. These licenses were reserved for so-called "designated entities" or "entrepreneurs" when they were originally auctioned. Not surprisingly, the interest in this auction is intense because the available licenses, which can be readily used to provide cellular-like mobile telephone service, will include many major markets.

Many large service providers have asked us to conduct an "open auction" for this spectrum by lifting the "designated entity" classification for this spectrum, which restricted eligibility to bid in the original C and F block auction to smaller companies—specifically entrepreneurs with gross revenues of less than $125 million and total assets under $500 million. Needless to say, those providers who are eligible to bid under the original DE rules are arguing strenuously that we keep the rules in place for this auction. Both sides of the debate have also proposed various compromise approaches, by which the DE restrictions would be kept in place for some subset of the licenses and lifted for others. At the same time, some of these DE providers are also urging that we lift the current transfer restrictions which prevent them from selling licenses they won in earlier C or F block auctions to entities who would have been ineligible to bid in those auctions. The FCC has released a Notice of Proposed Rulemaking in which it tentatively concluded that it should amend its rules to change the eligibility restriction for some but not all of the licenses and that it should address the transfer and assignment rules. A decision on this is expected early next month.

Spectrum Cap

Having discussed overall spectrum policy let me now turn my remarks to Congressman Stearns' bill on the CMRS spectrum cap. By my reading, this bill would eliminate the cap for spectrum auctioned after January 1, 2000, and for any of those licenses transferred or assigned thereafter.

The Commission in 1994 instituted the CMRS spectrum cap when the it was finalizing the service rules for broadband PCS. The cap applies to the 180 MHz of CMRS spectrum used by cellular, PCS and digital Specialized Mobile Radio (SMR) services predominantly to provide mobile voice, but increasingly to provide mobile data services and, in some cases, fixed services as well. It governs the amount of CMRS spectrum that can be licensed to a single entity within a particular geographic area. Under the cap, a single entity may acquire attributable interests in the licenses of cellular, broadband PCS, and digital SMR services that cumulatively do not exceed 45 MHz of spectrum within the same urban geographic area, or 55 MHz within the same rural geographic area. The goal has been to prevent excessive

concentration and promote active competition within each CMRS market by limiting the amount of this critical resource any one entity could control. In urban areas, for instance, no one entity can control more than 25% of the available CMRS spectrum; thus the cap ensures that there are at least four competitors licensed in each area.

The spectrum cap has played a vital role in ensuring the development of competition in the market, with all the benefits this brings to consumers. There remain significant reasons to be concerned about the effects of undue concentration of CMRS spectrum. For example, even in major metropolitan markets, where numerous competitors are offering mobile voice and data services, the two cellular carriers still have in excess of 70% of the customers in most markets. We recognize that this situation is changing as new entrants into these markets begin offering services and competing for customers. Nevertheless, many firms that have been awarded licenses are still in the early stages of their network build-out.

Last fall the Commission completed a review of the CMRS spectrum cap. It concluded that eliminating the spectrum cap *at this time* could lead to a reduction in competition through market consolidation. Specifically, following extensive review—which included analysis of the state of competition in CMRS markets—the Commission concluded that the public interest was best served by retaining the prime aspects of the spectrum cap. It found that the spectrum cap continued to serve several important purposes: promoting competition, preventing excessive concentration of licenses, providing incentives for licensees to make more efficient use of their spectrum, encouraging innovation, and promoting dissemination of licenses among a wide variety of applicants.

In last fall's review, the FCC also recognized that adjustments to the spectrum cap rule were necessary to reflect market conditions. For instance, it revised the cap's attribution rules with respect to passive investors. These changes make it easier for carriers, especially small carriers, to raise capital. In addition, the FCC raised the spectrum cap to 55 MHz for rural areas. The FCC found that the economics of serving rural areas are different than are urban areas. In rural areas, there are fewer problems to permitting the spectrum to be held by a smaller number of players. We are not likely to have five, six, or seven carriers all offering competing services in rural markets, the way we do in urban markets and, as a result, the risks of anticompetitive conduct by foreclosing entry by permitting some greater degree of consolidation of spectrum are lower. A 55 MHz aggregation limit in rural areas will permit carriers serving these areas to achieve economies of scope and scale and will allow greater partnering between PCS and cellular in those areas, thereby helping to make competition in rural areas more vigorous. Such partnering might also further the deployment of PCS and other broadband services to rural areas.

The "bright line" aspect of the spectrum cap also promotes regulatory certainty and promotes regulatory efficiency. For instance, the cap greatly expedites the assignment of spectrum using auctions because it eliminates the need for case-by-case analysis of whether a carrier's bidding for, and acquisition of, spectrum in particular markets would result in undue spectrum concentration. The cap also speeds the processing of transfers of control or assignment of licenses; in that context also, it provides clear guidance to parties involved in what the FCC is likely to find acceptable and what licenses they will likely have to spin-off. Thus, it enhances regulatory certainty and transparency for licensees and improves regulatory efficiency for the FCC.

Much has been said about the impact of the spectrum cap on the ability of CMRS carriers to provide advanced broadband mobile services. We all support and want to encourage the efficient and timely deployment of advanced mobile technologies. But we must also be cognizant of the risks of undue market consolidation if we allow CMRS carriers to aggregate spectrum in excess of the cap. In a system like ours that relies principally on market forces, not government mandates, to ensure the development and deployment of new wireless services and technologies, one must proceed cautiously before permitting substantial consolidation and reduced competition in wireless markets. Such consolidation would likely lead not only to higher prices, but also to reduced incentives for investment and innovation. Thus, we could well see a slower, not faster, rollout of advanced wireless services if we permit this to become a more concentrated, less competitive marketplace.

CMRS markets are rapidly changing. PCS is becoming available in more and more areas, PCS and digital SMR are attracting more and more subscribers, and market share differences between cellular and these new competitors are narrowing. Technology also is rapidly evolving. Current digital technologies are up to 20-25 times more efficient than analog technologies, and even the early implementation of 3G technologies promises to double or triple that efficiency. While new services rapidly increase demand, new technologies help respond on the supply side. The

FCC will continue to track these changes and report on the evolving level of competition in CMRS markets as part of its annual report on the state of CMRS competition. In the meantime, we will attempt to ensure that our policies are current and reflect the best interests of the American public in this rapidly changing environment.

Since issuing our most recent spectrum cap order last fall, we have sought additional ways of ensuring that broadband CMRS carriers could obtain needed spectrum for advanced services. For example, the FCC has stated that as it makes new spectrum available, it will consider whether to exempt that spectrum from the cap or otherwise adjust the cap. Certainly, additional spectrum provides a basis for liberalizing the application of the cap. As we make more spectrum available for 3G services, including by using some of the bands identified in the WRC, we will certainly consider how, if at all, to apply the spectrum cap to those new allocations. The first application of this approach came in January of this year when the FCC determined that the 30 MHz of spectrum to be auctioned this fall in the 700 MHz range would not be subject to a spectrum cap. But it made this decision in large measure because the CMRS spectrum cap helped ensure that a competitive structure in the CMRS marketplace was being maintained.

Also, with regard to the upcoming PCS C and F block auction, the Commission currently is considering allowing large carriers—many of whom argue for additional spectrum in the near future—the opportunity to bid for some of these licenses. Further, we are considering whether to divide the 30 MHz C blocks into three blocks of 10 MHz, which would allow virtually all carriers to bid for at least some of these licenses in virtually all markets in order to gain additional spectrum and do so without any need to exceed the CMRS spectrum cap.

Where the spectrum cap truly interferes with a carrier's provision of advanced services, the Commission has endeavored to be flexible. In our 1999 spectrum cap order, we expressly invited carriers to submit waiver requests if they could credibly demonstrate that in a particular geographic area the spectrum cap was having a significant adverse effect on their provision of 3G or other advanced services. Carriers were asked to identify what additional services they would provide if the spectrum cap were waived, why such services cannot be provided without exceeding the cap, and any potential adverse effects of such a waiver, such as on competition in the relevant geographic market. While some carriers have requested general waivers of the cap, no carrier has submitted a specific request demonstrating the need for such a waiver in any particular market. But we stand ready to consider such waivers as we pursue the long-term solution of making spectrum available. Finally, even though our most recent review of the spectrum cap was completed just ten months ago, the FCC has committed to reviewing the cap before year's end.

Conclusion

All around the world, the growth in demand for wireless services has been unprecedented; and estimates are that by the year 2002 wireless users will number toward one billion. An important part of this demand will come from anticipated new multimedia services and the Internet.

The nature of the wireless services is highly dynamic; and the mobile communications services of today, and certainly of those expected in the future, are a far cry from the first mobile telephony offerings of two decades ago. Wireless services have significantly progressed from early analog techniques, through major changes resulting from digital processing of the signals and advancements in miniaturization and portability of equipment.

The FCC must now attend to several different aspects of spectrum management to assure that next-generation mobile services are brought to the American public on a competitive basis, in a manner to permit efficient and orderly transition from earlier generation services, and with sufficient flexibility to permit operational and technological efficiencies. How all us involved in this dynamic field—including the Congress, the Executive Branch agencies, the FCC, and the industry—respond to these challenges will determine how quickly we as a nation make progress to the next generation of mobile communications. We are confident that we can all meet this challenge.

Mr. TAUZIN. The Chair thanks the gentleman.

The Chair will recognize the final witness on this panel, Mr. Malcolm Lee, Assistant Deputy Secretary, Department of State.

We will place Mr. Stearns, the author of the legislation in the Chair. I have to make another vote in another committee right now. So Mr. Stearns will take over the Chair.

Mr. Lee, you are recognized for your 5 minutes.

STATEMENT OF HON. MALCOLM R. LEE

Mr. LEE. Thank you, Mr. Chairman. It is a great pleasure to appear before this committee to address the important issues of spectrum management and the 2000 World Radio Telecommunication Conference as they relate to Third Generation wireless in the 21st Century.

I will make three points today.

First, that information technology is transforming the U.S. economy and wireless communications is at the cutting edge of this new economy.

Second, that the U.S. delegation to the World Radio Conference succeeded in our objectives of identifying multiple bands for possible 3-G deployment and in doing so we established a sound framework for the deployment of Third Generation wireless services while protecting incumbent users.

Third, as we look ahead I would like to assure you that the Department of State will work closely with other agencies, Congress and the private sector to aggressively carry forward domestic decisions and policies with respect to Third Generation and international fora.

The World Radio Conference is convened every 2 or 3 years under the auspices of the International Telecommunications Union. It met most recently from May 8 to June 2.

These conferences attempt to establish an orderly framework for use of the radio spectrum without which chaos would reign and radio communications would be impaired by interference by competing signals and transmissions. Third Generation wireless services are a major part of the agenda for the last conference. The U.S. position on IMT-2000, as 3-G is known in the ITU world, is guided by three basic principles.

The first, to take into account incumbent users of the bands being considered for possible IMT-2000 implementation.

Second, to establish a strong forward-looking framework for the development and deployment of new technologies.

Third, to preserve flexibility in the domestic implementation of conference results in IMT-2000. In recognition of existing systems in the bands being considered internationally for IMT-2000 and the need to lay a framework for development and deployment of new technologies such as 3-G, the U.S. developed the proposal for the conference that identified multiple bands for possible IMT-2000 use.

This proposal was developed with the full participation of the U.S. private sector and interested U.S. Government agencies, and in the end, the World Radio Conference adopted the essence of the U.S. proposals and identified spectrum in several bands or portions of bands as being available for IMT-2000 or other uses.

The results provide us the necessary flexibility to decide what is best for the U.S. in the development of IMT-2000 service offerings while giving full consideration to the incumbent users of the identified bands involving market forces and other domestic and international considerations.

I would like to recognize the truly outstanding performance of Ambassador Gail Shettler in leading the U.S. delegation. Against difficult odds, she delivered a truly magnificent result. We have much to learn from her success.

I would also like to give special recognition to all members of the U.S. delegation for their tireless efforts.

The road ahead: The results of the World Radio Conference will be implemented in the United States through processes undertaken and managed by relevant domestic agencies, principal among them, the FCC and the Department of Commerce.

The Department of State, in cooperation with other agencies, will present the results of these domestic processes before a variety of international fora. There will be several international meetings in the near future during which we will have the opportunity to engage other countries in order to advocate U.S. interests with regard to 3-G wireless services.

Among our objectives at these meetings will be to secure leadership positions and relevant activities and to shape the discussions and agendas in a way that will advance U.S. spectrum policies.

Several of these meetings will tackle tough, technology work necessary to evaluate the implications of IMT-2000 implementation in the specific bands identified by the World Radio Conference.

Among other things this work includes technical evaluation of the ability of IMT-2000 systems to share common spectrum with incumbent systems without causing interference.

In conclusion, Mr. Chairman, we are pleased to report that the World Radio Conference 2000 results with respect to IMT-2000 met U.S. objectives. We maintained the flexibility necessary to pursue our national prerogatives with the best possible implementation of IMT-2000 and the several bands identified at the World Radio Conference.

The U.S. process for assessing the feasibility of implementing 3-G in these bands has already begun through the initiatives of the relevant government agencies.

The Department of State is a partner in these initiatives as we carry forward the results of these U.S. processes to a growing number of international fora.

Mr. Chairman, I look forward to working with you and this committee as we carry that agenda forward.

[The prepared statement of Hon. Malcolm R. Lee follows:]

PREPARED STATEMENT OF MALCOLM R. LEE, DEPUTY ASSISTANT SECRETARY OF STATE

Introduction

Thank you Mr. Chairman. My name is Malcolm R. Lee. I am Deputy Assistant Secretary of State for Economic and Business Affairs and the United States Coordinator for International Communications and Information Policy at the Department of State. Working with the Secretary and Assistant Secretary for Economic Affairs, I am responsible for the formulation, coordination, and oversight of foreign policy related to international communications and information policy, including determination of U.S. positions and the conduct of United States participation in negotiations with foreign governments and international bodies.

Before coming to the Department of State in June, I served as Special Assistant to the President and Senior Director for International Trade and Economic Policy within the National Economic Council of the White House. There, I worked on a broad range of economic and trade matters, including the 1997 World Trade Organization (WTO) Basic Telecommunications Service Agreement, the U.S.-China Bilat-

eral WTO Accession Agreement, and legislation recently passed by the House of Representatives to extend Permanent Normal Trade Relations status to China.

It is a great pleasure to appear before this Committee to address the important issues of spectrum management and the 2000 World Radiocommunication Conference as they relate to Third Generation wireless service and the 21st Century. I look forward to working closely with you Mr. Chairman, Congressman Markey, and other members of this Committee as I fulfill my responsibilities.

Economic and Technological Context

Mr. Chairman, I compliment you for convening this hearing. Information and communications technology is transforming the U.S. economy, fueling record growth, higher wages, higher productivity, and fundamental changes in the way we conduct business and our daily lives. Information technology (IT) accounts for only 8% of total jobs, but has been responsible for nearly one-third of U.S. economic growth from 1995 to 1999. Declining information technology prices have lowered the overall inflation rate by one half of a percentage point from 1994 to 1998. And the production and use of IT was responsible for more than half of the acceleration in U.S. productivity growth in the second half of the 1990s.[1]

An integral component of this new economy is the wireless telecommunications industry. Use of the airwaves—the radio spectrum—is the lifeblood of this industry, as well as that of other commercial and governmental users. The next generation of wireless telecommunication services promises to expand further and revolutionize this new IT-driven global economy with innovative new services and capabilities for businesses and consumers.

The 2000 World Radiocommunication Conference

In my former capacity, I was able to attend, for a brief period in May, the International Telecommunication Union's (ITU's) World Radiocommunication Conference (WRC). I am pleased to have this opportunity to describe to the Committee the results of that Conference as they relate to third generation wireless.

The WRC is convened every two to three years under the auspices of the ITU with the most recent WRC being held in Istanbul from May 8 to June 2, 2000. These conferences establish the frequency allocations and regulatory procedures and regulations necessary for the harmonious operation of global radiocommunication services. The WRC attempts to establish an orderly global framework for the use of the radio spectrum. Without that framework, and without coordination, chaos would reign and radiocommunications would be impaired by interference of competing signals and transmissions. The Final Acts of these conferences are submitted to the Senate for advice and consent to ratification.

I would like to recognize, at the outset, the truly outstanding performance of Ambassador Gail Schoettler, former Lieutenant Governor of Colorado, in leading the U.S. delegation in its preparation of U.S. positions before the Conference, and in the presentation of those positions at the Conference. Against difficult odds, Ambassador Schoettler and her team delivered a magnificent result that preserved and advanced U.S. interests. We can all be proud of the contribution she made to this country in this capacity. I would also like to give special recognition to all members of the U.S. delegation for their tireless efforts before and during the Conference that resulted in the solid achievements that we will review, in part, today.

We have much to learn from Ambassador Schoettler'ssuccess and I am committed to taking whatever steps are necessary, in coordination with the Commerce Department, the Federal Communications Commission (FCC), and other interested agencies, to ensure we are effectively advancing U.S. interests internationally. We must remain vigilant that we have organized ourselves as effectively as possible, that the private sector and government agencies are working as a team, and that we begin our preparations early enough to ensure the best possible U.S. proposals for the Conference. We must maintain high level attention and reach out to our international partners. In that spirit, I have consulted with the leadership of the Department of State, and will be calling a meeting of relevant agencies to review our preparations for WRC 2003. A careful review of Ambassador Schoettler's personal specific recommendations will be part of that process. Both my interagency colleagues and I will continue consultations with the private sector so that their views can be integrated into the planning for WRC 2003.

The United States successfully addressed several important issues at the WRC. These included:

- Protecting existing radionavigation satellite bands from allocation to other services and allocating a new band for this service;

[1] See U.S. Department of Commerce Digital Economy 2000.

- Adopting technical provisions for sharing between geostationary and non-geostationary satellite systems;
- Fighting off restrictions on the free flow of information by making sure that content based restrictions were not written into the Radio Regulations; and
- Ensuring new broadcasting-satellite channeling plans protected an acceptable number of U.S. systems and imposed no unacceptable technical or operational constraints for our region.

Third Generation (3G) wireless communications, collectively referred to in the ITU as IMT-2000, was another prominent issue on the WRC-2000 agenda. The U.S. position on IMT-2000 was guided by three principles:

1. To take into account incumbent users of the bands being considered for possible IMT-2000 implementation;
2. To establish a strong, forward-looking framework for the development of new technologies; and,
3. To preserve flexibility in the domestic implementation of the Conference results on IMT-2000.

In other words, Mr. Chairman, the goal of the United States, often in the face of strong opposition, was tomaintain our national prerogatives for management of potential 3G spectrum. That required ensuring a result that would allow and encourage the development of new advanced communications applications while taking into account incumbent U.S. users of these bands. Maintaining U.S. flexibility for upcoming national spectrum management decisions was essential to the United States given important incumbent government and U.S. commercial users in the bands that a number of prominent international players sought for IMT-2000 use.

Results of the WRC 2000

At the Conference, the United States faced a strong push by the European Conference of Posts and Telecommunications (CEPT), many Asia-Pacific states, and several countries in our region, for globally harmonized bands for 3G wireless services. These proposals were for the use of bands with either existing heavy U.S. government use or with existing heavy U.S. commercial and educational users. I refer here to the bands 1710-1885 MHz and 2500-2690 MHz, respectfully. The 1710-1885 MHz band is heavily used by Federal agencies, particularly the Department of Defense, for uses such as point-to-point tactical microwave relay transmissions and space operations.[2] A portion of this band, 1710-1755 MHz, has already been reallocated in 1999 for non-Government use as of January 2004 under the 1993 Omnibus Budget Reconciliation Act (OBRA 93). The 2500-2690 MHz band is extensively used by commercial and educational entities, such as colleges and universities that are licensed to operate Instructional Fixed Television Service (ITFS) stations for distance learning applications as well as for commercial purposes such as the Multi-point, Multichannel Distribution Service (MMDS).

In recognition of existing systems in these bands, and the need to lay a framework for development and deployment of new technologies such as 3G, the United States developed a proposal for the WRC that identified multiple bands for possible IMT-2000 use. This proposal was developed with the full participation of the U.S. private sector and interested U.S. government agencies. In the end, the WRC adopted the essence of the U.S. proposals and identified spectrum in several bands, or portions of those bands, as being available for IMT-2000 or for other services. The result allows for U.S. domestic processes to evaluate and study future deployment of 3G services.

The WRC decisions on IMT-2000 were consistent with the principles I stated earlier and with the proposal of the United States entering the Conference. The results provide us the necessary flexibility to decide what is best for the United States in the development of IMT-2000 service offerings, while giving full consideration to the incumbent users of the identified bands, evolving markets forces, and other domestic and international considerations. The WRC resolution relating to IMT-2000 and the new spectrum allocation stated:

> "... due consideration should be given to the benefits of harmonized utilization of the spectrum for the terrestrial component of IMT-2000, taking into account the use and planned use of these bands by all services to which these bands are allocated."

The WRC did not assign any priority to the implementation of one band over another, thus maintaining the implementation flexibility sought by the United States.

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[2] For example Telemetry, Tracking and Command (TT&C), which is used to monitor and control space launches.

The Road Ahead

The Department of State will work closely with other interested agencies to ensure that the results of the WRC relating to 3G are translated into benefits for the U.S. Government, the private sector, and U.S. citizens. The results of WRC 2000 will be implemented in the United States through processes undertaken and managed by the relevant domestic agencies, principal among them being the FCC and the National Telecommunications and Information Administration (NTIA) at the Department of Commerce. Assistant Secretary Rohde of the Department of Commerce and FCC Wireless Bureau Chief Sugrue have outlined their plans in this regard.

The Department of State, in cooperation with the other agencies, will present the results of these domestic processes before a variety of international fora. This requires developing international positions and strategies—at bilateral, regional and multilateral levels—to advance U.S. policies and interests. Timely domestic decisions by the relevant technical agencies on 3G related spectrum will put the United States in the best position to engage other countries as they formulate their own domestic policies and requirements with respect to 3G services.

Mr. Chairman, allow me to note a few of the activities that the Department of State has already undertaken, or will undertake, to ensure that the results of WRC 2000 are implemented in a manner consistent with U.S. principles and global economic goals.

There will be several international meetings in the near future during which we will have the opportunity to engage other countries in order to advocate U.S. interests with regard to 3G wireless services. Among these meetings will be an August meeting of the Organization of American States Consultative Committee on Radiocommunication Matters (CITEL) and an international meeting in August of ITU Working Party 8F which has been assigned the work relating to IMT-2000 and future advanced mobile telecommunications applications.

Among our objectives at these meetings will be to secure leadership positions in relevant activities and to shape discussion and agendas in a way that will advance U.S. spectrum policies. Several of these meetings will tackle technical work necessary to evaluate the implications of IMT-2000 implementation in the specific bands identified at WRC-2000. Among other things, this work includes technical evaluation of the ability of IMT-2000 systems to share common spectrum with incumbent systems without interfering with each other's operations.

Conclusion

Mr. Chairman, in conclusion, we are pleased to report that the WRC 2000 results with respect to IMT-2000 met U.S. objectives. We maintained the flexibility necessary to pursue our national prerogatives for the possible implementation of IMT-2000 in several bands identified at WRC. The U.S. process for assessing the feasibility of implementing IMT-2000 in these bands has already begun through the initiatives of the relevant government agencies. The Department of State is a partner in these initiatives as we carry forward the results of the U.S. domestic process into a growing number of international fora.

Thank you, Mr. Chairman and to the Subcommittee for this opportunity to share with you some of the results of WRC 2000, and to report on our ongoing activities to promote the full benefits of the emerging information and communications technology based economy.

I look forward to working with you Mr. Chairman, with this Committee, with my colleagues at other government agencies, and with the private sector to ensure that the Department of State, and the U.S. Government as a whole, are doing everything we can to advance U.S. interests internationally.

Mr. STEARNS [presiding]. Thank you, Mr. Lee.

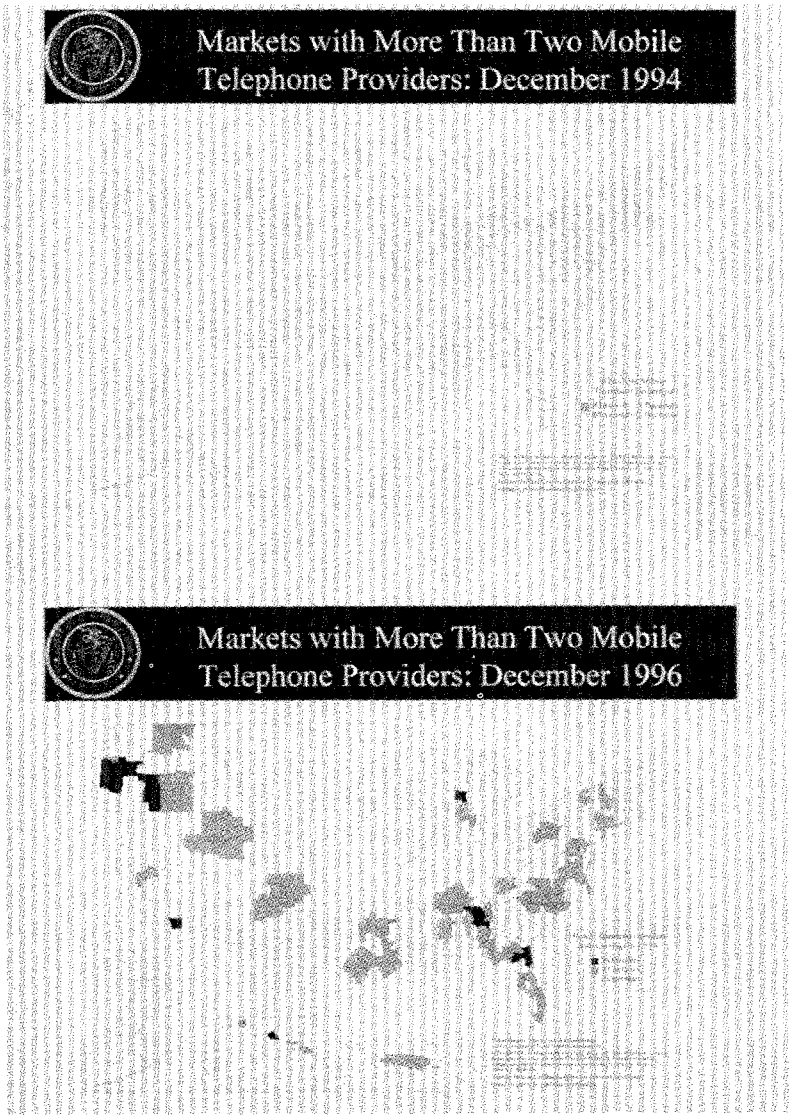
Mr. Sugrue, when I saw your charts over there, it looked like even after all time has gone by, and this appears to be one of the most competitive areas of telecommunications because those charts were pretty dramatic.

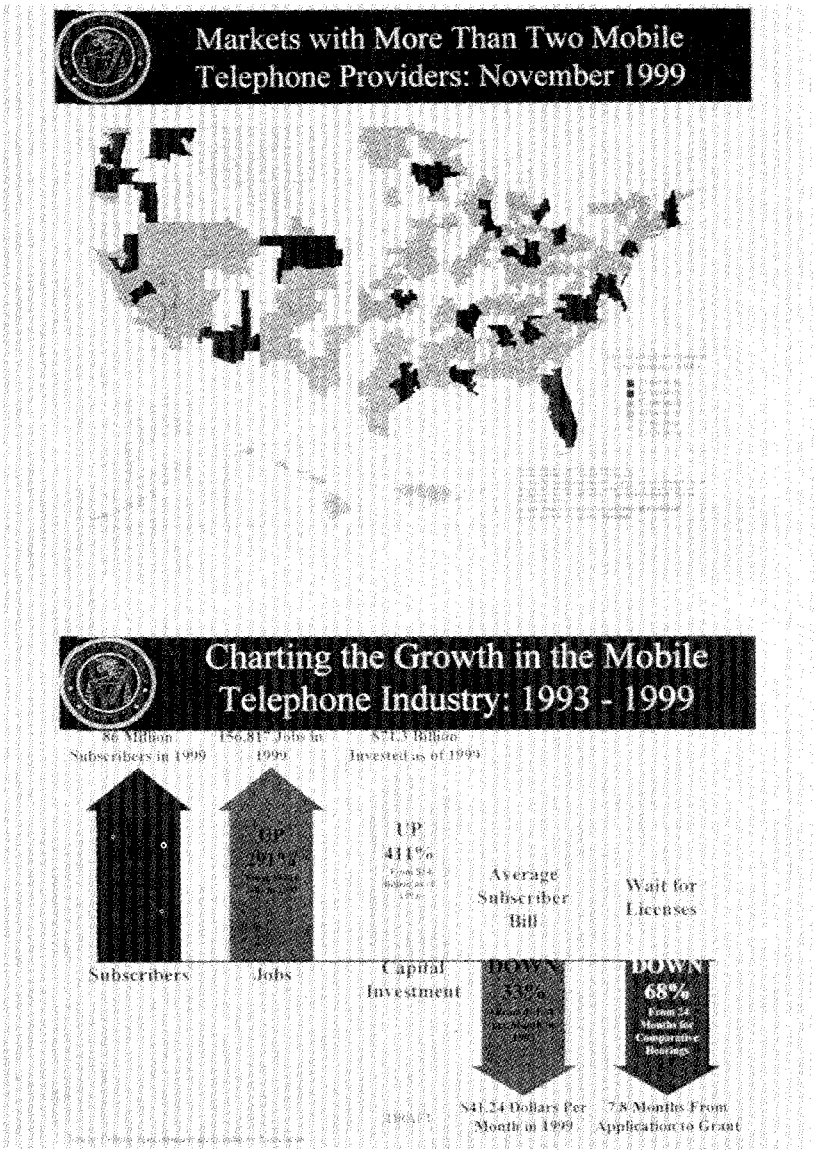
If possible, I think the committee would like to have copies of those. Were they in your testimony?

Mr. SUGRUE. I don't know whether they are in the testimony. Are they? If not, we will certainly supply them.

Mr. STEARNS. We would like for you to supply those.

[The charts follow:]


Markets with More Than Two Mobile Telephone Providers: December 1994
Markets with More Than Two Mobile Telephone Providers: December 1996


Markets with More Than Two Mobile Telephone Providers: November 1999
Charting the Growth in the Mobile Telephone Industry: 1993 - 1999
86 Million Subscribers in 1999
156,81[illegible] Jobs in 1999
$21.5 Billion Invested as of 1999
UP 411%
Average Subscriber Bill
Wait for Licenses
Subscribers
Jobs
Capital Investment
DOWN 33%
DOWN 68%
From 24 Months for Comparative Hearings
$41.24 Dollars Per Month in 1999
7.8 Months From Application to Grant

Mr. STEARNS. It seemed like you had rural areas where you still, even at this date, you don't have them. Now, I understand from the staff in those rural areas that you have raised the caps to 55 MHz.

Mr. SUGRUE. Yes, right.

Mr. STEARNS. I guess the idea is there is less competition there so we will raise the caps. So following that argument, I would like to say that in Boston, for example, they have AT&T, Cellular One, Sprint, PCS, Verizon Wireless and Omnipoint and who knows about tomorrow?

Here in Washington we can choose from AT&T, Cellular One, Sprint, PCS, Voicestream and Verizon Wireless.

Mr. SUGRUE. And Nextel.

Mr. STEARNS. So if in the rural areas you are increasing the MHz, why in the areas where it is very competitive, why aren't you doing it?

Mr. SUGRUE. We get a lot of questions on that because it looks backwards, just the way you put it, that is, there is less spectrum congestion in rural areas, so why lift the cap there?

There are two sides to the arguments about the spectrum cap. One is the congestion point, but the other is what are the downsides from lifting the cap which is basically market consolidation and less competition.

When we looked at rural areas, it seems we were not going to have, as a practical matter, 6 or 7 competitors in rural areas. We will be lucky in some of these to have 3 or 4.

As you pointed out, those areas that still had white space on them were almost all rural areas. The map that had some yellow in it with only three competitors was also rural areas. There seemed to be no need to keep a cap on. Remember, the goal is to ensure competitive market structure.

We want to ensure in Boston and in Washington that we have an opportunity to have at least 4 and more desirably 5 or 6, there are six competitors in Washington right now.

The only effect of lifting the spectrum cap in a town like Washington would be to allow one of the six to acquire the other. Lifting the cap itself doesn't create one more MHz of spectrum for the industry as a whole. The pie doesn't get any bigger. It just means it is divided into fewer slices.

So instead of 6 carriers, we will have 4.

Mr. STEARNS. By lifting the caps that would happen?

Mr. SUGRUE. By lifting the cap on the present 180 MHz, that is what would happen. Where I think we are in agreement, as we go forward and make new spectrum available, I think that is a good occasion to consider lifting the cap.

Mr. STEARNS. So for the auctions that you are talking about, September or next year, you agree to lift the cap? Are you saying this afternoon that you agree to lift the caps?

Mr. SUGRUE. Well, the Commission did decide that for the 700 MHz auction. I would certainly anticipate that Assistant Secretary Rohde referred to and Coordinator Lee referred to that is coming out of the international process, when we identify that as commercial mobile radio spectrum for 3-G type services, I can't commit what a future Commission will do in a year or two, but I think that

is a very fair question to say, "Hey, let's say we put 100 MHz more on the table. How are we going to treat that under the cap?"

One concern I would have with the approach under the bill, Congressman, is that it just says "don't apply the cap at all to it, no spectrum aggregation limits."

That would let a single carrier or one or two, but literally a single carrier, acquire all the spectrum in that auction.

I think it might be more appropriate and what I think I would recommend to the Commission at the time, if I am still there, would be to consider adjusting the cap, you know, if it is 45, raise it to 55 or something suitable.

Mr. STEARNS. Let me, if I could, have staff put up the chart that I brought with me for my opening statement. I don't know if you saw that chart.

Mr. SUGRUE. I was just looking at it during your statement.

Mr. STEARNS. You know, the U.S. is dwarfed internationally as compared to Japan, Britain, or even Argentina in allowing spectrum allocations. In fact, many countries including Australia, Brazil, Korea, the Philippines, Singapore, Taiwan, and Venezuela don't even have a spectrum cap.

Now, how do you explain that in those countries they don't even have a spectrum cap, yet you are saying here this morning, you are conditionally, and isn't it true that Bell South was denied a spectrum cap waiver for going one MHz over the spectrum cap?

Mr. SUGRUE. No. It was actually for half a MHz, but who is counting? That is correct, actually.

Mr. STEARNS. Don't you think that that is absurd, for you to deny because of a half a MHz?

Mr. SUGRUE. Well, I think the Commission's reasoning at the time, the argument Bell South made was because they were using it for data services it shouldn't count against the cap. That was the principal policy argument.

I think the Commission found no way data services are going to be part of what CMRS is all about. Certainly as we move Internet services we wouldn't want a policy that said data doesn't count for some reason or——

Mr. STEARNS. So it was the wrong decision?

Mr. SUGRUE. No, I didn't say that. I said that the policy argument for not applying the cap was it shouldn't apply to data services. The cap should only be focused on voice services.

Mr. STEARNS. Wasn't it just for that purpose?

Mr. SUGRUE. Wasn't it just for what purpose?

Mr. STEARNS. When they want this extra half a MHz?

Mr. SUGRUE. They acquired a mobile data network which counted under our cap. It was used exclusively for data. But as we evolved, the same spectrum will be used for data and voice interchange. It is now.

Mr. STEARNS. But to answer my question——

Mr. SUGRUE. Yes. I would like to get back to that if I could.

Mr. STEARNS. All these countries are dwarfing us and you see some countries that don't have any spectrum cap. Do you think we are just losing the possibility of innovation in our wireless industry if we continue to have this cap?

Mr. SUGRUE. I don't think so. Dwarfing us maybe in terms of the amount of aggregation they permit. Let me take the U.K. because I am most familiar with that. They just did a 3-G auction. It got a lot of attention because of the amount of money it raised.

They had the functional equivalent of a spectrum cap, only they apply it as a one license to a company rule. They had 140 MHz of so-called 3-G spectrum. They divided it up into five licenses. One was reserved for a new entrant, 35 MHz. The other 4, 1 was 30 MHz and the other 3 were 25. If you add that up, that is 140.

No one company could get two licenses. In other words, there was a very clear and very strict limit on spectrum aggregation in that market.

The U.K. has four 2-G providers. It made the spectrum management decision that it wants five 3-G providers and carved the spectrum up accordingly. It could have taken that 140 and made bigger hunks of it in effect by dividing it only into four licenses. But it made it smaller because it wanted more competition.

You can look across Europe and across Asia. No country that I am aware of is using the transition to 3-G as an occasion to allow their industry to consolidate down, in other words, to have a reduction in competition. They are all going from their so-called second generation base and moving up.

In Europe, at least in almost all the EU markets, there are going to be 4 to 6 3-G competitors. All we are trying to do is preserve that same competitive market structure that we think has served us well here, and will serve us well in the future.

The answer may be that we need to get more spectrum on the table.

Mr. STEARNS. Okay. Thank you. My time has expired. The gentleman from Massachusetts, the ranking member, Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman, very much. Again, you know, it has from our perspective, historically, not been how much spectrum any one company may have, but how many competitors are in each market, because the essence of our telecommunications policy in the United States is that we are trying to induce paranoia in all of the other companies.

The more there are, the more paranoia is induced. We saw from 1980 to 1992 in a duopoly there isn't a lot of progress. There just isn't. You are sitting on half a market, you know, and no one feels they have to innovate and have to lower the price of the service to consumers.

So we believe that we are in the lead because we really have done this great job of creating this incredibly paranoia-driven marketplace that has served us so well and I think it continues. That is the essence of our policy.

Many of these countries that we are look at over here, they just don't have a lot of competition inside of their countries. In fact, the country itself is part of the company and has less of a stake in ensuring that there is paranoia, because the government doesn't like to be paranoid, since they have a piece of the action.

So, necessarily, you have to factor that in as you look at the rest of the world. They are following us. They are trying to catch up to our policy, introducing more competition.

So I would like you to start off, Mr. Sugrue, if I could, by telling us whether or not, depending on the company, if they have 30 or 40 or 45 MHz right now, generally speaking it has been utilized fully.

How much is left over? What else can be run out of the existing spectrum that most of these companies already have in terms of their capacity to continue to expand?

In the same way we were talking about in the medical telemetry area, perhaps there is another 5 or 10 years some people are contending. I guess the meter reading industry is saying they have so much spectrum right now they are not even going to use it, the medical telemetry industry. They don't need any more.

How do you view that issue generally in terms of the industry incumbents that already have a piece of this spectrum?

Mr. SUGRUE. Well, right now, one interesting thing is that very few carriers, very few carriers have 45 MHz, that is; they are not cap constrained, at least that is a regulatory matter. They could acquire more spectrum. We looked pretty carefully at that with respect to the C- and F-block auction we have scheduled for November.

Since Mr. Dingell is not here, I guess I can mentioned that. I was going to avoid raising it.

Mr. MARKEY. The question now is raised, should we apply the cap to that spectrum?

Mr. SUGRUE. There was an initial question as to whether to keep it as a set aside or not for designated entities. The Commission has proposed, it hasn't got to the order stage, but proposed splitting the baby, lifting it for some and not for others.

But when we looked at it, it was clear that the Commission also thought that dividing those 30 MHz licenses into 10 MHz slices would allow virtually all carriers in virtually all markets to acquire additional spectrum, that is, incumbent carriers in the market.

As I said, almost no one is at 45 right now. I should note that as a practical matter, too, in some of these major transactions the Department of Justice in its anti-trust review is more conservative than we are.

In the Verizon-GTE-Vodaphone family of transactions, they insisted on divestiture of licenses down to 35 MHz in most markets, whereas we would have allowed them to go up to 45.

On the technology point, Congressman Markey, new technologies not only will provide a lot of advanced data services, but are much more efficient in terms of delivering voice services as well.

Current CDMA technologies deliver about 20 to 25 times over spectral efficiency in terms of the number of voice channels. The next generation will double that.

Mr. MARKEY. So if a PCS company today has 30 MHz, are they using 10 of that right now, 20 of that right now, 26 of that right now, on average?

Mr. SUGRUE. Sprint, which is the fastest growing carrier in the country, that they are using ten or less in all their markets.

Mr. MARKEY. Of their 30, right now?

Mr. SUGRUE. Yes.

Mr. MARKEY. Mr. Hatfield, can you give us an idea of the new technologies that are out there that might make it more possible

for the incumbent companies to wring more efficiencies out of the existing spectrum?

Mr. HATFIELD. There are a number of techniques. One is called compression, where essentially you reduce by using computer power, reduce the number of bits that you have to transmit to convey a particular conversation or whatever, and there is also more efficient, what we call more efficient modulation techniques that essentially enable you to send more bits per second per unit of bandwidth.

Then, of course, the whole nature of the cellular idea is rather than having a single conversation being broadcast covering a very wide area, you shrink the size of the coverage area down so that you can use the same frequency over and over and over again in the same area.

So a conversation here, somebody standing out in the corridor using a cellular phone, that same frequency can be used in northwest Washington very easily for another conversation.

So by shrinking the size of the cells down, you can get additional use.

Mr. MARKEY. These two ideas that you just mentioned, do they wring out an extra 5 percent efficiency or 10 percent or is it more like 50 percent?

Mr. HATFIELD. No. As Tom was saying, they can be very significant. There are technologies like using very highly directive antennas so if you and I were having a conversation the antenna would be pointing at you.

Let me state clearly that these additional technologies cost some money. So what the public policy tradeoff is is what is the cost of that additional technology versus the cost of taking spectrum away because this is all encumbered spectrum we are talking about now.

So to provide new spectrum for somebody you almost invariably have to take it away from somebody else and there is an opportunity cost associated, being an economist for a moment, there is an opportunity cost associated with that.

So there is a balancing here between the new technology and the cost of the spectrum because you can make that tradeoff.

Mr. STEARNS. The gentleman's time has expired. The gentleman from Oklahoma, Mr. Largent, is recognized for 5 minutes.

Mr. LARGENT. Thank you, Mr. Chairman. I just have one comment and one question. It is interesting talking about the spectrum because it is a very unique commodity. I can't think of another resource, call it a natural resource or commodity that the government essentially owns, operates, controls, delegates and distributes.

So it really makes it kind of a nuanced subjected to talk about when you think about it. My question is really pretty simple and follows along the same lines as Mr. Markey's.

That is, one of the witnesses that will testify on the next panel made an ominous prediction. Mr. Kelley of Leap Wireless said that, let's see, I have a quote here, he said "Leap Wireless loves its lawyers, it just does not want to pay more of them to contest the market concentration that is sure to come if H.R. 4758 is adopted."

Mr. Sugrue, I would just like you to maybe make a comment about Mr. Kelley's prediction that market concentration—that frankly we are seeing it in pharmaceuticals. We are seeing it in

telecommunications. We are seeing it in food services. We are seeing it in just about every industry.

Do you agree that if H.R. 4758 is adopted, the caps are lifted, that we would see a market concentration and do you also agree that it would result in limiting competition in the wireless industry as opposed to encouraging competition?

Mr. SUGRUE. I would agree that before we are able to allocate and make more spectrum available for these services, lifting the caps would be a mistake, I think. It would allow consolidation and that would have, I think, negative impacts on the industry.

I will acknowledge though, that the bill is forward looking. Again, it applies to future auctions. Now, we have one sort of funny twist there in that we have some of the old spectrum that is in a future auction. That is the C- and F-block that has been discussed a bit. I would continue to apply the caps to that spectrum because I think we would see the consolidation there.

But as I said, the 700 MHz spectrum which was the first new spectrum we had to apply the cap to, we said, no, that is new spectrum. We will take that off cap. We are not trying to constrain people from growing. But I think it is vital to preserve a competitive market. As I say, when I look overseas I see them moving to more competition, not less.

Whatever the answer is, and we can talk about what it is, it is not to permit our competitive market structure, as I said, to reconsolidate down.

Mr. LARGENT. When the FCC is considering an application for spectrum, I guess there is a process that you go through in the auction where you are applying to participate in the auction and you have to have some sort of reason for needing the spectrum.

I assume the FCC would require that. In other words, you wouldn't just allow a participant in an auction who just wants to hoard spectrum. Is that true?

Mr. SUGRUE. Well, we addressed that in two ways. One, an auction puts a price on spectrum. We think when you could just come in and get spectrum for free by pleading your case effectively and lining up support, we were concerned that was more of a risk. That is the first step.

Second, we also have service requirements in some of our services where you have to, for example, PCS and Cellular, the first of what we call "build-out" requirements for our PCS services have just come due. Those carriers have to file reports showing they are providing service to a certain percentage of the customers in their license area.

Then, the third thing is the spectrum cap which prevents the hoarding. That is, we say up to a certain limit, you can go up to 45, but not beyond that.

Mr. LARGENT. Is that within a given market?

Mr. SUGRUE. Yes, within a geographic market. We have been fairly receptive to aggregations across the country. There does seem to be a trend toward nationwide footprints that seems to be efficient, that seems to be what customers are looking for. So we have allowed carriers to coble that together area by area by area.

We are just very concerned. For example, in Washington we don't want AT&T and Sprint merging or any of the other major carriers

because we think that would be bad for competition here or Boston or wherever.

Mr. LARGENT. Thank you, Mr. Chairman. I yield back.

Mr. STEARNS. I thank the gentleman. The gentleman from Ohio, Mr. Sawyer, is recognized for 5 minutes.

Mr. SAWYER. Thank you very much, Mr. Chairman. Mr. Rohde, you mentioned that you were looking forward to a time when the allocation process could be automated to go from weeks or days to a matter of seconds. Could you tell us how you plan to go about doing that?

Mr. ROHDE. We are in that process right now. As I stated, we have in the budget request for 2000, seeking money from Congress to help us further along that process. It is fairly complicated. It involves us automating the process within NTIA, but also, since we work with these 53 different Federal agencies, they need to automate their process as well as they connect into our agency.

Also keep in mind, a great deal of this allocation work that we do is classified. So these communication systems have to be encrypted and they have to be protected because several of these communications need to be classified.

Mr. SAWYER. Is the success of what you are seeking to do dependent on concomitant efforts at each of those 50 or so other Federal agencies?

Mr. ROHDE. It is dependent because we have to be on the same communication network. We have to have the same or similar automation processes that communicate with each other and NTIA could have the greatest automated system within our agency, but if the other agencies do not have that it won't work.

Mr. SAWYER. Does your budget request anticipate that need? Is it reflected within yours?

Mr. ROHDE. It does request that. In fact, it is consistent with the 80-20 rule that Congress has established in spectrum management.

What that means is that the request is for $1 million, but $200,000 would come as a direct appropriation to NTIA which then would be matched by $800,000 through the agencies because it is a service to all the other agencies.

Mr. SAWYER. Mr. Sugrue, when can we in the United States expect to have 3-G technologies available such that, for example, the single hand set be compatible across a number of national frontiers?

Mr. SUGRUE. I have two answers to that, Mr. Sawyer. One is at the first level it really is a carrier choice. We in this country do it somewhat different than they do in other countries where they allocate spectrum, specify a standard, say it has to be used for 3-G services, define what 3-G is and so forth.

We make spectrum available on a more flexible property-like basis. The current spectrum that the carriers have, they are free to deploy 3-G services or 3-G type services in it right now.

Indeed, many of them are in the process of going to what in the parlance of the industry now is called 2½ G which is a little short of full 3-G, but much faster in terms of bandwidth than what we have now.

We will see those types of things, at least according to some of the carriers, starting the first half of next year. We are already seeing data services and Internet access.

Again, pick up the Washington Post and, you know, you can't avoid, every other page you see an ad, "Here, buy this phone." The phone prices are falling through the floor as they almost always do in a competitive market.

So full 3-G, that is probably more 2002, 2003. But here it will be a more, I think, evolutionary path than sort of Europe has said 3-G shall occur beginning in 2002. Everyone has to be there. I think we will evolve over time to it.

Mr. SAWYER. Mr. Lee, and perhaps Mr. Sugrue as well, could you talk about and develop a little more fully the negotiations with the Europeans in their rules to allow different 3-G technologies to compete in their markets and their harmonization with what we are seeking to do?

Mr. LEE. Certainly. In 1998 the European Commission issued a directive that there would be one standard for UMTS which is the EU version of 3-G as it was approved by their Standards Institute.

This was the government mandating a single standard. We viewed it as unacceptable and being contrary to long-standing U.S. policy of standard neutrality. Through a series of very senior Cabinet level interventions, the Europeans agreed to technology neutralizing for 3-G open to all standards, but they saved one standard. They said that their standard had to be one use throughout Europe, but they would allow one other standard in each member state.

We prefer non-discriminatory standards, letting the marketplace decide. We have made our views known to the Europeans. We will continue to make our views known that we do not favor a regime which favors any standard. So we are still engaged with them on this matter.

Mr. STEARNS. The gentleman's time has expired. The gentleman from Illinois, Mr. Shimkus is recognized for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. Let me first correct for the record something Mr. Hatfield said. He pointed to me and said I was to the left of Ed Markey. I don't think I have ever been to the left of Ed Markey, with all due respect to my friend. I am not sure any of us have been to the left of Ed Markey.

Mr. MARKEY. Where is Paul Wellstone when you need him?

Mr. SHIMKUS. Since I have been here we have gone from the spectrum is worth a lot of money to the spectrum is worth nothing to the spectrum is now worth a lot of money again. And I have only been here 4 years. So I am waiting to see what happens in the next iterations.

But it does speak to the issue of not making budget prognoses on spectrum because we are never really sure what technology will do and how it may be in the future, looking ahead.

I also do some work with the Army War College in preparing some of these General-wannabes to come before committees. One thing I tell them is "Always be prepared to be bushwhacked and know your enemy."

This question is not an attempt to do the bushwhacking, but it is a question that is directed very similar, not the same companies,

but it has to deal with the private auction of radio spectrum and the alarm industry.

As I understand in the Balanced Budget Act of 1997 it instructs the FCC to exempt from spectrum auctions those private radio operations used to protect the safety, life, health or property. Alarms can easily qualify for this exemption. I am interested to hear the FCC's perspective.

The concern is the auction of the large versus the small, what some think is an exemption for the smaller, regional type operations and the fear of the crowding out inability then to expand the business.

Can you give me some of your thoughts, Mr. Sugrue, of the Commission?

Mr. SUGRUE. Yes. Congress, in 1997, did create this new category of public safety radio services. We have always had a category of public safety services but it was clear from the statutory definition that public safety services were really government agencies, police, fire, et cetera.

This new category though is clear that it is broader than that. It includes some private types of users that are using the spectrum in a public safety related manner and to deliver public safety-related type services.

We have a notice outstanding, that is how we initiate a proceeding, to address just that and to come up with a definition. We have a full record on that. We should have an order on that this fall. I would say October, maybe September, but October is probably safer, to address what that definition is and how to apply it.

Congress in a sense took away the exemption from auctions for private services generally, but then put this one back in for public safety related private services. That is what we are wrestling with, how to apply those two provisions.

Mr. SHIMKUS. And that is why there is a bit of fear in the industry because they are not sure how the resolution of that will be. So I throw that out, as you know, as a concern.

Let me also talk about an issue that I have heard on spectrum auctions and when you go to the auction process, if there is a high demand for a limited commodity, the price and the revenues to the government could be at this point in time pretty high as we saw in the initial auction which then for some went belly up for a while.

How does the mid to smaller companies, how do we reconcile and allow them to be somewhat competitive in this market? I am speaking kind of as a person who believes in supply and demand, believes in the markets, and believes in competition. But how do the mid-sized to small or medium-sized companies get involved in the game?

Mr. SUGRUE. In a couple of fashions. First of all, in what we call our band plan, that is, how many licenses there will be in terms of the size of the geographic areas and the size of the spectrum blocks. We try to be sensitive to the needs of small businesses.

We also have to be sensitive to the other factors Congress identified including the roll out of services and efficient and so forth. But certainly we look at that.

We also provide bidding credits for small businesses. We consistently do that in just about every auction so that a small business,

and there is some head room in that in terms of how small you have to be, can participate and get like a 25 percent bidding credit. So if you bid a dollar, you only have to pay 75 cents.

We also permit licenses to be what we call partitioned and what we call disaggregated, that is divided up so if a big carrier doesn't want to serve, we hear this a lot from the rural areas, they don't want to come in to the rural areas, they can divide their license and essentially transfer it to the rural areas.

Finally, under Dale Hatfield's leadership, we are looking at spectrum leasing as an option, whether we can promote that, which is another way small companies can either acquire licenses and lease them to others or vice versa, that is, they can lease from a major carrier spectrum in the areas that major carriers are using.

Mr. SHIMKUS. Thank you. Mr. Chairman, my time has expired.

Mr. STEARNS. The gentleman's time has expired. The gentleman from Michigan, the ranking member of the full committee, Mr. Dingell, is recognized for 5 minutes.

Mr. DINGELL. Mr. Chairman, I thank you. I have these questions for Mr. Sugrue. Mr. Sugrue, this is a question which will require a simple yes or no answer.

I understand the majority of C-block licenses the FCC intends to re-auction in November were originally assigned to NextWave Communications and that NextWave has offered to pay the government the full amount of the bid which is nearly $5 billion in one lump sum payment. Is that correct?

Mr. SUGRUE. I should——

Mr. DINGELL. Just yes or no.

Mr. SUGRUE. I am recused on the NextWave matter, unfortunately, because of my prior firm. But I think I can answer that. I think the answer is yes. Yes, I think I can answer yes.

Mr. DINGELL. The answer is yes?

Mr. SUGRUE. I believe so.

Mr. DINGELL. Is that true, Mr. Hatfield?

Mr. HATFIELD. As far as I know, sir.

Mr. DINGELL. Mr. Rohde?

Mr. ROHDE. I don't know.

Mr. DINGELL. You don't know.

Now, Mr. Sugrue, has the FCC refused to accept this payment which would resolve all legal questions of title and allow NextWave to roll out services immediately to the public? I understand again you are recused, but this is simply a factual question.

Mr. SUGRUE. Well, they have certainly not accepted the payment. That is true.

Mr. DINGELL. Do you agree with that, Mr. Hatfield?

Mr. HATFIELD. You are getting beyond my personal knowledge, but that is my understanding.

Mr. DINGELL. There is no one, I think, who would quarrel with that.

Now, the FCC believes that it has authority to cancel the NextWave licenses and to reauction them in November. Is this a judgment which is bottomed on settled law or is it an open question before the courts?

Mr. SUGRUE. The FCC——

Mr. DINGELL. Is this a matter which is in litigation before the courts at this time?

Mr. SUGRUE. NextWave has sought Supreme Court review of the Second Circuit decision that upheld the Commission's decision. That is correct.

Mr. DINGELL. So there is a substantial legal controversy on this matter, is that not true?

Mr. SUGRUE. There is an appeal taken, yes.

Mr. DINGELL. The FCC has not agreed with the matter and it has not been concluded before the courts?

Mr. SUGRUE. There are still appeals pending, yes, sir.

Mr. DINGELL. Do you agree with that, Mr. Hatfield?

Mr. HATFIELD. I am an engineer.

Mr. DINGELL. You might give a better answer than the lawyers. This matter is also before the DC Circuit Court; is it not?

Mr. SUGRUE. Is has been dismissed, but I presume it will be back there soon, I would guess.

Mr. DINGELL. Let's talk here about the value of the bids. Now, if these bids are under a legal cloud when the auction commences in November, doesn't that mean that the licenses will probably be sold for a lower price?

Mr. SUGRUE. Risk about ownership could very well affect price, although the potential bidders we talked to seemed fairly confident and very enthusiastic about bidding on them.

Mr. DINGELL. Of course, that is what you would expect a bidder to tell you; isn't it?

Mr. SUGRUE. Some of them come in and wring their hands about "Oh, we can't bid now, we can't," whatever. You would be surprised at how many stories we hear about the problems with the licenses we are trying to auction.

Mr. DINGELL. Are you going to sit there then and tell me that this will produce the highest possible return for the government on the sale, when it is under a cloud?

If you were advising a client to buy a property under a cloud, would you tell them "bid the top" or would you tell them "bid the lowest?"

Mr. SUGRUE. In these circumstances people seem fairly competent in the Commission's legal position and the competitive market seems to be driving the price up. I think it will produce a lot of money, to the extent that is the concern.

Mr. DINGELL. But it is a legitimate concern?

Mr. SUGRUE. It is a legitimate concern, Mr. Dingell, yes.

Mr. DINGELL. Now, I assume the licenses could not be immediately issued after the auction; is that correct? There are a lot of questions that will have to be resolved, including waiting the outcome of the lawsuit because the court may very well stay the sale until the rights of the parties are concluded. Isn't that right?

Mr. SUGRUE. Well, I shouldn't speculate on NextWave's legal strategy. People do seek stays of auctions pretty regularly, every auction.

Mr. DINGELL. Young lady, why don't you come up to the table? Mr. Sugrue is looking very uncomfortable. He is in part recused and I am just trying to get some factual answers from him.

Mr. SUGRUE. Come on up to the table, Kathleen. This is Kathleen——

Mr. STEARNS. Just give us your name for the record.

Ms. HAM. My name is Kathleen O'Brien Ham. I am Deputy Chief of the Wireless Telecommunication Bureau.

Mr. DINGELL. Now, could you tell us, Ms. O'Brien, that given the uncertainties involved, why does the FCC insist on canceling these licenses rather than simply settling the litigation for one and all, accepting $5 billion for the U.S. Treasury, and letting the licensees go to work immediately for the benefit of American consumer?

Mr. STEARNS. The gentleman's time has expired. We are going to have a second round.

Mr. DINGELL. Can she just answer my question?

Mr. STEARNS. Oh, yes. I am just saying that we are going to have a second round here and so——

Mr. DINGELL. I will be happy to wait for my turn on the second round, but I sure would like to hear the answer.

Mr. STEARNS. Absolutely, absolutely.

Ms. HAM. I should say that there is a pending petition for reconsideration that NextWave has before the Commission. So the commissioners themselves will very soon have the opportunity to address the questions that you are indicating.

Mr. DINGELL. How long has that been pending?

Ms. HAM. It has been pending, I believe, since February. Don't quote me on that, but I believe since February.

Mr. DINGELL. My $40 Casio watch says this is July. It has been pending 6 months and nothing has been done on this during that time?

Ms. HAM. Well, at the same time that that was filed with the Commission, NextWave filed a petition for review in the DC Circuit which was just recently dismissed. The Commission addressed the petition for review in the DC Circuit.

Mr. DINGELL. Which matter has now been dismissed?

Ms. HAM. The appeal that NextWave sought in the DC Circuit simultaneously with filing a petition for reconsideration before the Commission was dismissed by the DC Circuit.

Mr. STEARNS. The gentleman's time has expired.

Mr. DINGELL. Could I just get an answer as to what has happened to this petition?

Mr. STEARNS. Madam, can you just tell him what has happened?

Ms. HAM. Yes. The matter is pending before the Commission. The Commission will very shortly address the merits of the question that you raise about cancellation.

Can I make one point? That is that on the face of all the licenses that were auctioned, including NextWave, the licenses were conditioned on full and timely payment. A payment was due on October 29, 1998.

Other C-block licensees lost their licenses when they failed to make that payment. That was my only point.

Mr. DINGELL. I appreciate your assistance, but it goes beyond what I want.

Ms. HAM. Okay. Sorry, I am sorry.

Mr. STEARNS. The gentleman from New York, Mr. Fossella, is recognized for 5 minutes.

Mr. FOSSELLA. Thank you, Mr. Chairman. I would yield my time to Mr. Dingell, but I am afraid his pacemaker would explode at this point.

Just simply, in your opinion, over the next decade what is the demand or how much spectrum will be needed over the next decade, Mr. Sugrue?

Mr. SUGRUE. Over the next decade for commercial mobile radio services? That is hard to tell because there is a race between the increasing demand and the increasing capacity of the technology to essentially derive more efficiency out of the current allocations.

Mr. FOSSELLA. Can you give me a rough estimate? I am sure there are industry estimates as to what is going to be needed.

Mr. SUGRUE. Well, we have at the FCC, tentatively, and maybe I should let Dale answer this because in part it is a technology question, but in a policy statement the Commission adopted last fall, they tentatively identified an extra 85 MHz that could be allocated for these services.

We have 30 MHz that was referred to at the UHF spectrum that we are allocating that can be used for this. We have 48 more MHz, that is Channels 52 to 59, another part of the digital transition.

So we have some spectrum coming down the line that will be available for these services.

Mr. FOSSELLA. I am just curious to hear over the next decade what you believe is going to be needed and I am just curious if you have an assessment.

Mr. HATFIELD. If I could ask for a clarification of your question, are you asking the demand for all uses of the spectrum or just for advanced mobile services?

Mr. FOSSELLA. Actually, both, if you can. If you don't have that now, you can provide that. That would be great.

Mr. HATFIELD. I shouldn't have asked the question. The only thing that we can really say is that there is just an explosive demand that is being driven by the fact we are an increasingly mobile society. The devices are getting smaller, cheaper, and more functional and all that sort of thing.

There is efficiency that you can gain in transportation. So all the forces are working, I think, in the direction of continued increases in demand, offset, as Tom said, by the fact that we are getting some help on the technology side as well.

Let me just say specifically regarding mobile, one of the difficult issues is that it depends upon, for example, if you believe people on their Palm Pilots will be getting actually delivered video pictures, for example, that consumes an awful lot of spectrum. If that market doesn't develop then there would be correspondingly less.

So it is very difficult for us in government trying to forecast with any degree of certainty what the market is going to do even a couple of years from now.

That is the reason the Commission in general has gone to this more flexible approach where we give the providers the opportunity to adjust the technology they are using and so forth to meet the changes in demand.

That is about the only thing you can hope to do, to give licensees flexibility.

Mr. FOSSELLA. So at this point, it is safe to say you haven't been able to quantify how much is going to be needed?

Mr. HATFIELD. No. Just because the fundamental changes here, the technology is changing so fast that what we are seeing is——

Mr. FOSSELLA. If I might, I mean presumably private industry is assessing their needs right now and planning for the future. I assume that industry has an assessment of what the needs are over the next decade.

Mr. HATFIELD. Yes. In part of our allocation proceedings, the industry typically will file reports with us in which they estimate future demand. As I said, the difficult is that a lot of those are dependent upon, you know, consumers willingness to buy certain new features and functions.

It seems like those things are difficult to forecast.

Mr. FOSSELLA. Let me shift gears for a second. I assume my time is probably running out. I think what Mr. Stearns was getting at before in terms of the global nature of this industry and whether the United States is going to be at an economic or competitive disadvantage, do you believe that the other nations have allocated and licensed sufficient amounts of spectrum to meet the needs of their wireless industries.

If yes, do you think the United States has meet that obligation, and if not, what should we be doing to do so?

Mr. SUGRUE. Well, I will take a crack at that. Let me just comment on industry studies as to their needs. It is important they do that, but I have never seen such a study that indicated any industry needed less spectrum than they have.

It is always "the sky is the limit." One virtue, again, of the auctions program, not to tout that, is that it makes people sort of put up or shut up in terms of what their needs are.

I think this industry, in fairness to them, is willing to put up. They are looking for an opportunity to buy additional spectrum. I think all the countries in the world are working toward providing enough spectrum for this next generation of mobile services, we and Europe, Japan and everyone else.

I think we have some special challenges here. For a variety of reasons, the spectrum, I think, is even more intensively used for a variety of uses, both non-government and government uses in the U.S. than anywhere around the globe. That creates special challenges and problems in terms of spectrum management.

For example, we have more broadcast stations than practically every other country. We had the U.K. up there. For years they had four national networks. That four channels was all they needed. They have licensed more broadcast stations since then. That is just one example. No one has quite the operations we have.

So I think it is especially challenging to the U.S. to carve out, particularly in the bands that can be used for mobile services which are down below three GHz, but I mean where it is the most crowded.

Mr. STEARNS. The gentleman's time has expired.

The gentleman from Virginia, Mr. Boucher, is recognized for 5 minutes.

Mr. BOUCHER. Thank you very much, Mr. Chairman. Mr. Sugrue, I also have some questions for you. I am concerned about the up-

coming auction of the 700 MHz spectrum which you now have scheduled for September 6.

That space, as I am sure you know, is now occupied by television broadcasters residing in Channel 60 to 69 and it is to be auctioned notwithstanding the fact that the broadcasters are not required to vacate that spectrum for many years into the future.

Even the date upon which the vacation of the spectrum will be required is somewhat uncertain. That uncertainty has dramatically depressed the anticipated price that this spectrum will receive at auction.

In the United Kingdom, a spectrum which I am told has propagation qualities that are somewhat inferior to our 700 MHz spectrum, recently sold at public auction for $30 billion.

Now the budget estimate that we have for the sale of our more robust and better 700 MHz spectrum is $2.6 billion. So you have $30 billion in the United Kingdom versus $2.6 billion for a better spectrum in the United States.

That discrepancy is caused by the uncertainty that exists about when this asset could be delivered to the purchaser. Now, it seems to me that we are perhaps squandering a budget opportunity. Here is an example of where budget policy is driving spectrum decisions and not even doing so in a way that is wise from a budgetary standpoint.

I would like to ask you if you first of all share these concerns, and second, if you do share these concerns, if you would agree that it would be in our national interest to postpone this auction and to have this auction at a time when we have some measure of certainty about when the spectrum is going to be vacated by broadcasters and be made available to the purchasers, an event which would dramatically increase the price that would be paid.

I would also like to ask you what would have to happen for this impending auction to be delayed.

The final question I would ask you, and you can answer these in any order that you like, is what in your opinion is the latest date, given current circumstances, by which broadcasters would be required to vacate Channel 60 to 69?

I remember when we were having the discussion about allocating spectrum to broadcasters for the digital transition that we made an agreement that they would not have to surrender spectrum back to the government until such point in time as the digital transition was complete. By that we meant that the consumer premises equipment, the TV sets in homes, would have to be digital compatible.

I think the figure we set was something like 80 percent of television sets being digital compatible. I can just about assure you that the last analog TV set in America will be in my Congressional district. It is going to be a long time before we get 80 percent digital compatibility with TV sets where I live.

So with that the standard, when do you think we are going to get to that point, if that is the standard. If it is not, when do we get to the point where we have some certainty about when the spectrum is going to be vacated and be made available to the purchaser?

So with that group of questions I would be very interested to hear what you have to say.

Mr. SUGRUE. Well, I think I will take them in random order. I would just like to note initially that the schedule for this auction wasn't our idea in the first instance. It was mandated by an act of Congress, I gather for budgetary reasons. There is still on the books in the Communications Act, a date that says "you shall auction it by such and such a date."

I know we did move this auction a little bit. We had scheduled it for May originally, and move it to September, which did place in jeopardy getting the money in the treasury by the time specified in the legislation. That made everyone a little uncomfortable, but we thought it was appropriate to do so.

But there was at least some feeling that if we held the auction within the timeframe Congress had specified that we would at least come close.

I know at least one of the Commissioners, and this will be a decision they will make, has already said he would be uncomfortable, indeed I think he has said "opposed" to moving the auction without a change in the law.

Now, others may feel differently about it, but I just wanted to put that sort of framework on it. I will certainly report back, Mr. Boucher, that you, and I heard the Chairman's opening remarks, have expressed these views and I think quite well.

I think it is a problem when you are auctioning off spectrum that is encumbered. Usually when we do this we have a plan in place that has a voluntary relocation negotiation and so forth that is followed eventually by a mandatory relocation.

So that a year or 2 years, at least 3 years out or something you can see at some point the Commission will step in and force people to move.

Mr. BOUCHER. Well, Mr. Sugrue, let me just say that no matter what happens, the money that is realized from this auction is not going to inure to the fiscal year 2000 budget. Now you are trying to auction this in fiscal year 2000.

What is the harm in delaying this even a year? You could then account for that money in the next fiscal year, which is when it would be received anyway. Is there any harm in doing that?

Mr. SUGRUE. I am not a budget expert. As you put it, I wouldn't see any harm, but the law——

Mr. BOUCHER. I am going to yield to Mr. Dingell who has a question on this.

Mr. DINGELL. The FCC has said that they don't have to vacate these channels until 2006. The gentleman here is asking a very important question. There is a voluntary relocation they might make.

Now "voluntary" means just that. It means if they really want to they can, but they don't have to. So all this time they are going to be waiting while it is decided whether or not they are going to pay, how much they are going to pay, and when they are going to get off.

They are essentially going to be buying a depreciated asset because they are buying something which is valued at being realized at some conjectural time in the future.

Now, how do you defend that? How does the Commission defend that?

Mr. SUGRUE. Well, again, in the first instance, we moved on this at the direction of Congress that required us to auction it off. If I could just lay out, perhaps, a somewhat different scenario, just to argue the other side.

Mr. DINGELL. Defend it, if you will.

Mr. SUGRUE. One way to help facilitate the transition of digital television is, if we get the new licensees out there they will have an incentive. This is very valuable spectrum, I agree with you 100 percent. This is beach-front property.

They will have the incentive to negotiate with the broadcasters. It will be a pretty penny, Mr. Dingell, I agree.

Mr. DINGELL. It is going to cost the taxpayers a lot because of the way you are proceeding. You are going to get a lot less for this than you would have gotten if you had handled the matter better.

Mr. STEARNS. I would remind the gentleman that we are going to have a second round of questioning here. Mr. Sugrue, why don't you finish up if you have your answer and then we will go to the second round so that all members can pursue this?

Mr. SUGRUE. Congress changed the law last year to require the accelerated auction, i.e., required us to auction off this spectrum sooner than 2006. I think the thought was it has some value in the commercial marketplace.

If you look at a map of the country, and I have one but not with me, of where these stations are, Channel 60 to 69 of the broadcast band are the least occupied channels. There are parts of this country where this spectrum is free and clear and usable.

Within some cities, parts of it are occupied but other parts are available for use.

Mr. STEARNS. The gentleman's time has expired.

The Chair recognizes himself for 5 minutes. We will pursue this a little bit. You have the public interest standard and then you have the Appropriations Committee. Under the public interest standards, can't you decide to delay this because you have your comment period coming. The dates of your comment period are like the end of September.

Yet, you have designated September 6 as the date you are going to do the auction on the 700 MHz. I think the first question is, can't you, on the public interest side, decide to delay this? I think that is what you are hearing from the committee. You seem reluctant to want to do anything.

Mr. SUGRUE. We moved the auction one time and all. I can tell you the Commissioners are reluctant to move it dramatically again because there is a specific deadline in the law.

As I said, I will report back the in of the members of this committee in seeing that auction moved, despite the provision of the law specifying a date.

While I am a lawyer, I haven't practiced in a while. I would have to check whether the public interest standard can overrule explicit directions in the Communications Act. But if it does, we will have a little fun with it.

Mr. STEARNS. We are told we don't want you to go down that road. I mean I don't want to kill a dead horse. But you have a com-

ment period from August 16 to September 15, yet you have given notice that September 6 is when you are going to do that auction.

What can the Justice Department or the FTC do to prevent a company from buying all the spectrum?

Mr. SUGRUE. Very little. Well, buying the spectrum, it depends whether it is at auction or through a merger. At an auction there is no particular Justice Department review at that time.

That is strictly a licensing matter under the exclusive jurisdiction of the FCC. So decisions as to how many licenses one company can acquire in an auction are a matter under the Communications Act for the Commission.

The Department of Justice and the FCC share jurisdiction. Under Hart-Scott-Rodino, the Department of Justice reviews certain types of mergers and the FCC reviews transfer of licenses and sometimes those involve the same transactions.

Mr. STEARNS. Is there any type of auction rule that you can do to prevent folks from buying all the spectrum? Is that a technical feasibility or is that a possibility to do the auction rules in such a way?

Mr. SUGRUE. Sure, we could——

Mr. STEARNS. Would that solve your problem?

Mr. SUGRUE. We do limit sometimes. For example, we have a restriction that we just sunset for what we call LMDS spectrum. That is spectrum that can be used for wireless local loop services, broadband services, fixed services, that prohibited telephone companies and cable companies from bidding on that spectrum in their operating areas to promote competition.

We could limit the number of licenses a carrier can acquire, any single carrier can acquire in an auction. The spectrum cap is just another way of doing that. Frankly, it is a more flexible way of doing that.

Mr. STEARNS. Following what Mr. Boucher mentioned about with the broadcasters vacating the channel, what private and public procedures are you folks doing? I mean this is not something that has just come to your attention today. What procedures and plans have you put in place and can you tell us what they are?

Mr. SUGRUE. The procedures and plans, the recent order the Commission adopted established certain guidelines and presumptions for voluntary transactions. By the way, we read the act as not permitting us to have mandatory relocation.

I think Congress was fairly clear that the broadcasters don't have to move out of that spectrum and we can't order them to move out of it until 2006 and even then only under the conditions that Mr. Boucher referred to which was 85 percent DTV penetration and certain other conditions.

If we could read it to have a mandatory relocation, say, you know, we think it is better for you to move in 2004, at least we in the Wireless Bureau, my friends in the mass media may feel differently, but we in the Wireless Bureau, I think, would welcome the ability to do such a reading.

What we said in the most recent order was, "You come to us with a deal where a broadcaster agrees to move early and the conditions in the local market are 1, 2, 3 and 4, there will be a presumption,

a rebuttable presumption, but a presumption that that transaction will be approved."

We are trying to provide some certainty, albeit within the voluntary negotiation framework, for band clearing to take place.

Mr. STEARNS. My time has expired. I just want to tell all members, on this second round what we intend to do is finish this and then adjourn for lunch and then come back with the second panel.

So at this point, Mr. Markey, the gentleman from Massachusetts, is recognized for 5 minutes.

Mr. MARKEY. Thank you. I just have one question and that is again for Mr. Sugrue. I would like Mr. Rohde to answer it as well.

Can you give us an update on progress on implementation of the enhanced 911 service? As you know, Mr. Tauzin and I and other members on the committee worked together on a bill signed into law last year on Wireless 911 services.

We have a strong interest in seeing wireless help save lives. What is the status of the FCC's implementation of that accurate location technology and, Mr. Rohde, what is the position of the administration on that issue?

Mr. SUGRUE. The date we established for the beginning of the rollout of E911, and it will be a transition because it is like all these things are, is October 1, 2001.

Last year we required all the carriers to file reports with us by this October 1, a year ahead of time, on their plans to implement.

This was to get sort of a head start as to where people stood, how they were going to implement, what problems were going to occur, so we didn't walk up to October 1, 2001 and then the sky is falling, it can't be done or whatever.

So we are trying to get ahead of the curve on that. We have been talking with carrier, technology vendors, manufacturers and the public safety community. All four of those groups have to be involved to have this be a functional system as to where things stand and where things need to be done or improved.

Mr. MARKEY. Mr. Rohde?

Mr. ROHDE. The administration obviously supported that legislation. At this time, as you know, this is really a matter where they are proceeding in implementing that. We have not, the administration has not seen anything that has caused us to feel we need to comment at this point. So we are just waiting and watching the FCC's proceedings.

Mr. MARKEY. Believe it or not, there are now 100,000 911 calls made everyday on wireless technology. So, obviously, it is critical that those safety issues, those emergency calls, are protected because it is going to increase and the public safety must be given the highest priority as we are working through this issue.

Mr. STEARNS. I thank the gentleman. Mr. Dingell is recognized for 5 minutes.

Mr. DINGELL. Mr. Chairman, thank you. For Mr. Hatfield, Mr. Hatfield, do you agree or disagree with the statement that digital service can provide 20 to 25 times as much capacity as analog?

Mr. HATFIELD. It depends upon the base of what the analog you are talking about——

Mr. DINGELL. Now you are sounding like a lawyer.

Mr. HATFIELD. I am trying not to. That sounds aggressive, but technology has been changing the rate. You look at the original analog systems that we installed in this country——

Mr. DINGELL. At this time it can provide 20 to 25 times——

Mr. HATFIELD. That is aggressive.

Mr. DINGELL. That is aggressive? But we would assume that the FCC would aggressively manage this, could we not?

Mr. HATFIELD. Yes, I think those sort of numbers would come from the——

Mr. DINGELL. Let us go to the next question. I don't mean to be rude, but my time is very limited here.

Do you know how much spectrum is used by the incumbent carrier such as Bell Atlantic and SBC, that is currently devoted to analog use? I believe in the case of Bell Atlantic it is 51 percent analog and in the case of SBC it is 59 percent analog. Is that right?

Mr. HATFIELD. I have no reason to doubt that.

Mr. DINGELL. Mr. Rohde, do you agree or disagree?

Mr. ROHDE. I do not know.

Mr. DINGELL. You don't know.

Mr. Sugrue?

Mr. SUGRUE. All the cellular carriers are still providing substantial amounts of analog service.

Mr. DINGELL. We could pick up a huge amount of spectrum by simply requiring them to move at an early time from where they are with analog to digital; is that not so? Yes or no?

Mr. SUGRUE. Moving to digital, yes, creates more spectrum.

Mr. DINGELL. It would create a lot more spectrum. Now, if we leave this situation go on in the course that it is, we open new spectrum to them, give them a opportunity to bid on it. They then can bid on it, get that new spectrum and then convert from analog to digital and have a whole lot more spectrum; isn't that right?

Mr. SUGRUE. I didn't follow every step in that process, but I think generally I agree with that.

Mr. DINGELL. Okay. And that would tend again further to diminish competition in terms of providing public service; would it not?

Mr. SUGRUE. Consolidation of providers in this market would diminish service in my view.

Mr. DINGELL. That is right. Now, does the FCC have a rule requiring these companies to maintain analog service?

Mr. SUGRUE. The two cellular carriers we do, yes.

Mr. DINGELL. You could repeal that, could you not?

Mr. SUGRUE. Yes, we could.

Mr. DINGELL. When does the FCC plan to look at the wisdom of this rule and consider repealing it so that these companies can take advantage of additional capacity?

Mr. SUGRUE. We are going to be looking at that the second half of this year.

Mr. DINGELL. The second half of this year? Is this going to proceed as speedily as the other matter we discussed earlier?

Mr. SUGRUE. At least.

Mr. DINGELL. You have not comforted me. Now, given the uncertainties involved, why does the FCC insist on canceling the NextWave licenses rather than simply settling the litigation once and for all, accepting $5 billion on behalf of the U.S. Treasury and

letting the licenses go to work immediately for the benefit of U.S. consumers?

There must be a good reason for this. Could somebody come forward and tell me?

Mr. SUGRUE. Could Ms. Ham respond?

Mr. DINGELL. Ms. Ham, without obfuscation, could you please give me an answer to that question and not to other questions? Why?

Ms. HAM. Again, I don't want to evade your question, but you have to understand the matter is pending.

Mr. DINGELL. All I want is an answer to my question, not to someone else's.

Ms. HAM. Fairness to all and process. The auctions program assigns thousands of licenses.

Mr. DINGELL. The answer here, I think, simply is that there is no reason. Isn't it?

Ms. HAM. No. I think the answer is that we set out rules. We condition the licenses on full and timely payment and we want to enforce that as to everybody. So from the Commission's perspective, it is just following our rules and our process.

Mr. DINGELL. When did the company not make a full and timely payment?

Ms. HAM. The Commission had suspended the payments for the C-block while it underwent a proceeding. All the C-block licensees were apprised of what the schedule for the payments would be. A payment was due on October 19, 1998.

Four C-block licensees came in and asked for a waiver of that payment deadline. NextWave was not one of them. The Commission denied that waiver, not once but twice.

Mr. DINGELL. NextWave had already filed for bankruptcy protection at this point.

Ms. HAM. NextWave had already filed for bankruptcy protection at that point, yes.

Mr. DINGELL. So now NextWave did not have to make that payment because they had filed for bankruptcy protection; isn't that right?

Ms. HAM. Again, the government is in litigation. You are putting me in a very awkward situation given that the government is in litigation on this very issue, which I think is what we are on appeal for.

Mr. DINGELL. Are you prepared to sit there and tell me that FCC is not required to wait for the courts to settle this matter?

Ms. HAM. I will tell you that I have been involved in the auctions program almost from the start. Every auction is contested. We deal with litigation. There is an 800 MHz auction that is going to start very shortly. A stay petition has been filed on that auction. My only point is that it is not unusual to have litigation associated with an auction.

If we caved every time somebody filed a litigation against us we would never conduct an auction. So I think we have to proceed. Our ruling from the Second Circuit was a very strong one because it goes to the question of our authority over the licenses.

From the Commission's standpoint, this is an issue of jurisdiction, of who gets to decide issues of assignment of licenses, bank-

ruptcy judges or in the instance of the Second Circuit, they said that these matters have got to be reviewed by the Commission and then by the DC Circuit which has exclusive jurisdiction over licensing matters emanating from the FCC.

Mr. STEARNS. The gentleman's time has expired.

The gentleman from Ohio, Mr. Sawyer, is recognized for 5 minutes.

Mr. SAWYER. Thank you, Mr. Chairman.

Just to follow up on that question, is the question of efficiency of current use of spectrum a factor in granting additional spectrum to current licensees?

Mr. SUGRUE. I hesitate only because if you are under the spectrum cap right now, we don't look at whether you are using your spectrum efficiently or not.

Mr. SAWYER. Should you be?

Mr. SUGRUE. I don't think so. I think one virtue of the spectrum cap we haven't gotten to is that it provides clarity, transparency, people understand it.

I was in private practice for almost 4 years between my various government stints and there were a lot of transactions we dealt with.

One nice thing in dealing with the wireless side as compared with some other types of transactions where you knew if you could structure your deal so that you came within the spectrum cap you would have no trouble at the FCC on the wireless side. You would go through.

On the other hand, if you were over that particular market, you had to come up with a divestiture plan, a spin-off plan.

Mr. SAWYER. Is it possible to drive measures of comparative efficiency that would be beneficial to the efficient use of available spectrum?

Mr. SUGRUE. It conceivably would be possible. I should say this, actually, in services that we do not auction we have rules like that.

Mr. SAWYER. How do you plan to deal with the allocation of spectrum to departments like DOD that don't want to give up current spectrum allocations?

Mr. SUGRUE. Very carefully.

Mr. SAWYER. Mr. Lee, I hope you are listening carefully because I am going to ask you to respond from a point of view of our dealings with the Europeans in particular.

Mr. ROHDE. My friend, Mr. Sugrue, is asking for relief, so maybe I will provide it. Your question, actually, is more appropriate to NTIA because we deal with them about the Federal Government spectrum.

One of the topics we are discussing at this hearing is IMT-2000, which, among the spectrum bands that were identified at the World Radio Conference for the development of IMT-2000, it identified three basic bands.

A couple of those bands involve government incumbents such as the Department of Defense.

Mr. SAWYER. You now stipulated to the basis of my question. It is the answer I am looking for.

Mr. ROHDE. Right. The question is how we move forward?

Mr. SAWYER. Yes.

Mr. ROHDE. We have to move forward in a very conscientious collaborative manner in which we are getting the Federal agencies and also the private sector, who also has incumbent interest in other bands that have been identified, to look at what is exactly the best process for us to proceed to identify additional spectrum, if indeed additional spectrum, wherever it is found, whether it is Department of Defense incumbent spectrum or private sector or whatever, part of that process has to involve a look at how do you compensate the incumbent use.

One of the challenges we have in this country is that we don't have spectrum reserves. All of it is being used.

Mr. SAWYER. Should efficiency in use of that spectrum be a factor as you measure further allocation of spectrum?

Mr. ROHDE. It certainly should and also, as I said in my testimony, we at NTIA, as the managers of the Federal spectrum with these Federal agencies, we are pushing upon them technologies and procedures in which they can more efficiently use the spectrum they have.

Mr. SAWYER. Mr. Lee, when we ran out of time the last time we were talking you were talking about the pathway for future negotiations with other jurisdictions.

Could you comment on Mr. Rohde's and Mr. Sugrue's comments on agency allocation from that point of view?

Mr. LEE. Right. As Assistant Secretary Rohde said, the work result was we identified several bands. The next step is to decide where we in the United States, where Third Generation wireless can go in the spectrum. That is being studied.

The international is fluid. Countries are making their national decisions. Assistant Secretary Rohde is committed to try to move the process quickly. But timely domestic decisions on these questions of spectrum and 3-G related issues, well, timely decisions will put the U.S. in the best position to take our national policies internationally as other countries make their decisions.

Mr. SAWYER. Mr. Rohde, Mr. Lee, how would you counsel us to press our European colleagues as we try to reconcile the decisions they make with the ones that we foresee as important to us?

Mr. ROHDE. Well, I think the short answer to that is to work closely with us as we engage with the Europeans on this. I mean, I was at the World Radio Conference and saw firsthand the challenges that we have in this international fora.

Part of that is that we have a philosophically different approach to spectrum policy and telecommunications policy than a lot of our European partners do. We have a more government-mandated approach and we have more private sector approach.

It is very important that the Congress work closely with the State Department and NTIA, the FCC, as we go into these international fora so that we can represent the interests of the U.S. industry and the U.S. consumers in the best way possible.

Mr. SAWYER. Thank you very much.

Mr. STEARNS. The gentleman's time has expired. The gentleman from Virginia is recognized for the final series of questions for 5 minutes.

Mr. BOUCHER. Thank you very much, Mr. Chairman. Mr. Sugrue, I want to return to the 700 MHz issues for a few moments and just

respond to a couple of the things that you said in response, I think, to Mr. Stearns' questions a few moments ago.

You were stating as a possible justification for going ahead with this auction in September the potential that if you had actual wireless license holders trying to get into the spectrum at a time when broadcasters were already there, that it might promote negotiations between those license holders and the broadcasters on a way to encourage the broadcasters to vacate at an early date.

What I am told about those negotiations, to the extent that they have already begun, is that they are going pretty badly. The broadcasters are asking for tremendous compensation.

For example, in some cases they want to share revenues with the wireless potential license holders. They want half of revenues in some cases. In other cases they are asking that the potential wireless license holders pay the entire cost for the transition to digital as a way to encourage them to get out early.

So it would appear to me that in these cases the negotiations are not going to fare very well. That probability is going to depress even further the amount of money that the wireless companies are willing to bid in this auction.

You know, our budget estimate is $2.6 billion. I am told that we may not even get that much. Let me stress again that this is for a set of frequencies that are more robust than what brought $30 billion in the United Kingdom. And we may not get $2.6 billion.

I think these facts underscore the need for the Commission to do whatever you can to exercise whatever discretionary authorities you have to delay this auction.

I think you have heard a clear statement from this committee today that it needs to be delayed. It is not even good budget policy to auction at this time, much less good spectrum management policy.

I would encourage you to do what you can. Take the message back. Let us try to get this delayed. Bluntly speaking, we don't have time in this legislative year to pass a bill. We have 5 weeks of Session left. You have observed the Congress long enough to know how long it takes to pass anything around here. We, bluntly speaking, don't have the time to pass a bill to delay this auction.

But it needs to be delayed. The government is foregoing a tremendous amount of budget opportunity here is we force this auction now. So I just hope you will take that message back. I would welcome anything you have to say. That is all I have to say Mr. SUGRUE. I will just assure you, I will take this message back. I am meeting with the Chairman at 2:30 this afternoon on a spectrum-related matter, but I assure you that this will be No. 1 before we get to that. I will express your views and those of the other members of the committee on it.

Mr. BOUCHER. All right. Thank you, Mr. Sugrue.

Mr. STEARNS. I thank the members and I thank the witnesses for their participation. The subcommittee will be in recess until 1:30.

[Brief recess.]

Mr. TAUZIN. The committee will please come to order. The Chair obviously wishes to apologize for his absence. I understand you had a little fireworks while I was gone.

We are going to try to calm things down now. We will get to the second panel. With my apologies, we have had both committee votes and floor votes that have taken us away.

The second panel will consist of Mr. Craig Smith, Vice President, Strategic Planning, SBC Wireless; Mr. Dennis Strigl, President and Chief Executive Officer of Verizon; Rudy Baca, Global Strategist of the Precursor Group; and Mark Kelley, Chief Technology Officer of Leap Communications International.

Gentleman, thank you so much for your patience and for waiting so long to testify. Other members will be arriving as this vote finishes on the floor. I apologize for the lack of their presence as well. This is a long day already. Thank you.

Before I introduce you and get you talking, I just thought of one feature of the wireless communication industry which is most disturbing to me. I take my phones off in the office when I have guests come in to visit with me. But they come in with their phones on. There ought to be some rule that the phones go off when-if anybody has a phone on, take it off right now so we can have a quiet hearing.

Mr. Craig Smith is Vice President of Strategic Planning, SBC Wireless.

STATEMENTS OF CRAIG M. SMITH, VICE PRESIDENT, STRATEGIC PLANNING, SBC WIRELESS; DENNIS F. STRIGL, PRESIDENT AND CHIEF EXECUTIVE OFFICER, VERIZON WIRELESS; RUDY L. BACA, GLOBAL STRATEGIST, PRECURSOR GROUP; AND MARK KELLEY, CHIEF TECHNOLOGY OFFICER, LEAP COMMUNICATIONS INTERNATIONAL

Mr. SMITH. Thank you, Mr. Chairman. My name is Craig Smith and I am Vice President, Strategic Planning, for SBC Communications.

Spectrum planning for our wireless affiliate, SBC Wireless is one of my principle responsibilities. Let me begin by thanking you and the members of your committee for providing me the opportunity to speak with you today on this vital issue to the United States and to its many current and future wireless customers.

SBC Wireless serves customers in 26 States, in Washington, DC and in two U.S. territories, with subscribers in 9 of the top 10 markets and 31 of the top 51 markets in the United States.

Mr. Chairman, radio spectrum is a scarce resource critical to the operation of all wireless systems. In most cases the acquisition of new spectrum is not as simple as buying additional switching or transmission equipment from a vendor or deploying new fiber systems in the ground to meet growing broadband service needs and terrestrial wire line networks.

By contrast, wireless operators, in order to serve the growing needs for new services through the use of limited spectrum resources, must have a firm vision of their future spectrum needs and a strategy for obtaining the right spectrum in the right quantity and the right place and at the right time.

Of vital interest to wireless carriers, spectrum allocation decisions involve the identification of available of potentially available spectrum for various uses.

Since domestic spectrum allocation decisions are in part tied to the international spectrum allocation process, any decisions in this area must address not only domestic concerns, but also international proceedings as was just observed at the World Radio Conference in Turkey.

These allocation decisions are important to domestic carriers because they impact the global compatibility of services with the U.S. and the rest of the world and ultimate pricing of wireless equipment due to scale worldwide production volumes.

That being realized, domestic regulatory decisions become vitally important. Ultimately the market value of spectrum is determined by the potential of the spectrum to satisfy business plan objectives.

Toward that end, however, the way the spectrum is licensed, for example, the particulars of the spectrum band, the build-out requirements, the restrictions on services that may be offered and whether the spectrum is currently encumbered with other users all impact how effectively that spectrum will be able to actually realize that potential.

All of these things ultimately have a tremendous impact on its value. Therefore, merely identifying the spectrum represents only one-half of the equation. Regulatory policies that follow these allocations will have dramatic impacts on the efficiency with which the allocated spectrum is ultimately deployed for service.

As a further example, decision concerning the amount of spectrum an operator may obtain, for example, the spectrum caps that we have talked about, stifle the marketplace's ability to solve spectrum shortages and have the effect of distorting the actual demand for additional spectrum.

That being said, Mr. Chairman, I will now offer the members of the subcommittee a brief review of specific issues facing current wireless operators today. Pursuant to the FCC rules, a single entity may currently acquire attributable interest in the licenses of broadband PCS, cellular and SMR services that cumulatively do not exceed 45 MHz of spectrum within the same geographic area.

The CMRS spectrum cap was originally adopted in 1994 to ensure no one carrier could completely control a single market, thus impeding the development of competition.

While this may have been a laudable goal during the industry's infancy and served the purposes for which it was intended, as was pointed out very graphically by Mr. Sugrue, the state of competition for wireless services has long rendered such a requirement moot.

Today's wireless markets feature from three to seven viable service providers offering various alternatives to both niche and general customers alike.

The growth in demand for wireless service is far exceeding every early prediction. The industry now faces limitations in network capacity caused by an increase in both the number of subscribers utilizing these services and the amount of air time each subscriber consumes.

I would like to address in my brief time remaining this issue that was brought up earlier regarding the bands in the 700 MHz range, which is the Channel 60 to 69 bands that have been designated by the Commission for potential fixed and mobile services.

For consumers to fully extract the benefit of this truly exceptional spectrum opportunity for next generation services, service providers need clear access to the spectrum.

The Commission's efforts to expedite the 700 MHz proceeding to meet the congressionally imposed mandates are laudable. The FCC has worked diligently to auction the 700 MHz band in full compliance with the Congress's objectives.

However, the required auction and service rules are very complex and may contain conflicts and ambiguities that require further clarification from the FCC.

So in summary on this point, we would like to say we concur totally with the remarks of Congressman Boucher that this auction should be delayed for all the reasons he so eloquently stated earlier today.

So in summary, Mr. Chairman, some wireless carriers, including SBC Wireless are already experiencing spectrum shortages simply trying to cope with increased demand for current services.

New opportunities and the anticipated demand for new higher bandwidth services promise increased spectrum shortages in the future. The spectrum for these services will likely exceed the increased capacity achieved through the operational improvements and technology innovations in major metropolitan areas, still leaving consumers without full access to the services they desire.

As noted, other countries have already committed significant blocks of spectrum to future services. It is in the public interest that the United States not fall behind the rest of the world in making spectrum available for new services.

Today, wireless operators are beginning to offer wireless data services. While these services are not yet at the byte rates envisioned over the IMT-2000 compliant network the fact remains that wireless data services will grow steadily over the next 10 years.

In the interest of consumers, service providers need to be prepared to accommodate that growth through the judicious implementation of sound spectrum policy that promotes the most efficient use of available spectrum.

Thank you.

[The prepared statement of Craig M. Smith follows:]

PREPARED STATEMENT OF CRAIG M. SMITH, VICE PRESIDENT—STRATEGIC PLANNING, SBC COMMUNICATIONS, INC.

Good morning, Mr. Chairman, my name is Craig Smith and I am the Vice President for Strategic Planning for SBC Communications and spectrum planning for our wireless affiliate, SBC Wireless, is one of my principal responsibilities. Let me begin by thanking you and the members of your committee for providing me the opportunity to speak with you today on this vital issue to the United States and to its many current and future wireless consumers.

SBC Wireless has enjoyed customer growth of over 130% during the past 3 years, closing 1999 with 11.2 million customers. Already in 2000, that number has grown to nearly 12.4 million. We serve those customers in 26 states, Washington, D.C., and two U.S. territories—with a total of 117 million potential subscribers in nine of the top 10 U.S. markets and 31 of the top 50 markets in the United States.

INTRODUCTION

Mr. Chairman, there are many types of wireless services resident in a variety of radio spectra. For the purposes of this hearing, I will confine my remarks to the collection of services commonly referred to as Commercial Mobile Radio Services, or

CMRS. The services that make up CMRS are cellular, broadband personal communications services (PCS), and specialized mobile radio.

Radio spectrum is a scarce resource critical to the operation of all wireless systems. In most cases, the acquisition of new spectrum is not as simple as buying additional switching or transmission equipment from a vendor or deploying new fiber systems to meet the growing needs of broadband services in our terrestrial wireline networks. By contrast, wireless operators in order to serve the growing needs for new services through the use of limited spectrum resources must have a firm vision of their future spectrum needs and a strategy for obtaining the night spectrum in the night quantity in the right place at the night time.

Having developed this vision and a complementary business plan to support its implementation, wireless operators must be concerned with two related but separate processes: *spectrum allocation* and *spectrum licensing*. Spectrum allocation decisions involve the identification of available or potentially available spectrum for various uses. Since domestic spectrum allocation decisions are in part tied to the international spectrum allocation process, these any decisions in this area must address not only domestic concerns but also international proceedings as was just observed at the World Radio Conference in Turkey. These allocation decisions are important to domestic carriers because they impact global compatibility of services, and the ultimate pricing of wireless equipment due to scaled worldwide production volumes.

That being realized, domestic regulatory decisions become vitally important. Ultimately, the market value of spectrum is determined by the potential of that spectrum to satisfy business plan objectives. Toward that end, however, the way spectrum is licensed, for example, the particulars of the spectrum band, build-out requirements, restrictions on services that may be offered, and whether the spectrum is currently encumbered with other users, impact how effectively that spectrum will be able to actually realize that potential. All of these things ultimately have a tremendous impact on its value. (For a discussion of "clearance" issues, see also, "Future Spectrum Allocations" below.)

Therefore, merely identifying the spectrum represents only one half of the equation. Regulatory policies that follow those allocations will have dramatic impacts on the efficiency with which the allocated spectrum is ultimately employed for service. As a further example, decisions concerning the amount of spectrum an operator may obtain (i.e. spectrum caps) stifle the marketplace's ability to solve spectrum shortages and have the effect of distorting the actual demand for additional spectrum.

That being said, Mr. Chairman, I will now offer the Members of the Subcommittee a brief review of specific allocation and licensing issues facing U.S. wireless operators currently.

SPECTRUM ALLOCATION IN THE UNITED STATES

The nations of the world, through the International Telecommunications Union (ITU), allocate spectrum to radio services in the form of an International Table of Allocations. Each nation also establishes a domestic table of allocations based to some extent on the International table. The US actually maintains two Tables of Allocation relative to the use of the spectrum, one at the FCC and one at the NTIA.

Congress chartered the Federal Communications Commission (FCC) with regulating non-federal use of radio with Congress providing guidance from time to time through federal acts and laws. The National Telecommunications and Information Agency (NTIA), on behalf of the President, exercises authority over federal government use of spectrum. Any "new spectrum" which the FCC may make available to commercial interests usually represents federal spectrum that has been reallocated for non-federal use.

CURRENT US SPECTRUM ALLOCATIONS

Cellular

Cellular Radiotelephone Service is licensed in the 824 to 849 MHz and 869 to 894 MHz bands in 306 Metropolitan Statistical Areas (MSA) and 428 Rural Service Areas (RSA). This 50 MHz of spectrum is divided evenly between the "A" and "B" carrier, 25 MHz apiece.

PCs

The FCC reallocated the 1850 to 1990 MHz band to Emerging Technologies and then specifically to digital Personal Communications Services (PCS). This is sometimes referred to as Broadband PCS because the FCC also established Narrowband PCS for paging and messaging at 901 to 902 MHz.

The Broadband PCS band plan provides for three 30-MHz licenses (blocks A, B, and C) and three 10-MHz licenses (blocks D, E, and F). The A and B blocks are

licensed in 51 Major Trading Areas (MTAs). The C, D, E, and F blocks are licensed in 493 smaller Basic Trading Areas (BTAs). Licenses for the A through F blocks were determined by auction. The A, B, D and E blocks were open to all bidders. The C and F blocks were set aside for entrepreneur or "small business" companies with restrictions against leasing or selling out to "bigger" companies within five years.

SPECTRUM CAPS

Pursuant to Section 20.6 of the FCC rules, a single entity may currently acquire attributable interests in the licenses of broadband PCS, cellular and SMR services that cumulatively do not exceed 45 MHz of spectrum within the same geographic area. This CMRS spectrum cap was originally adopted in 1994 to ensure no one carrier could completely control a single market, thus impeding the development of competition.

While this may have been a laudable goal during the industry's infancy, the state of competition for wireless services has long rendered such a requirement moot. Today's wireless markets feature from three to seven viable service providers offering various alternatives to both niche and general customers alike. With the growth in demand for wireless services far exceeding every early prediction, the industry now faces limitations in network capacity caused by an increase in both the number of subscribers utilizing these services and the amount of airtime each subscriber consumes.

By comparison, Japan's leading wireless carrier, DoCoMo, has 86 MHz of available spectrum throughout the country. In Britain, most companies operate with a 90 MHz allocation. Furthermore, both Europe and Japan are on schedule to deploy next generation, high-speed, wireless data services by the first half of 2001. To accomplish this, the Europeans have allocated 355 MHz while the United States—even after upcoming auctions—will have only 210 MHz available for the same services.

Ironically, as the industry matures, the goal of the Commission to ensure competition by limiting acquirable spectrum has evolved into a *de facto* barrier to innovation due to the near exhaustion of network capacity in many markets. This example of the "Law of Unintended Consequences" leaves viable carriers scrambling for alternatives to relieve upward pressures imposed by the marketplace for new and expanded feature sets.

Furthermore, as the volume of demand for airtime approaches full capacity in some systems, even the quality of basic voice services becomes impacted. Subscribers face situations wherein they cannot make calls for lack of an available channel. This, in turn, has the effect of damaging subscribers' perception of the carrier's quality of service despite the fact the system may be operating in optimal fashion given the spectrum available by law.

At the end of 1998, the FCC issued a Notice of Proposed Rulemaking (NPRM) asking for industry comment as to whether the cap should be repealed, modified or retained, or alternatively, whether the FCC should simply forebear from enforcement of the cap. In that proceeding, SBC urged the Commission to eliminate the spectrum cap.

IS THERE A NEED FOR MORE SJ2ECTRUM?

If forecasts of future demand for non-voice services such as data, digital music, and video prove accurate, demand for spectrum will exceed even the increased capacity achieved through technical innovation in major metropolitan markets.

The primary drivers of increased spectrum demand will likely be continued growth in mobile subscribers and the degree to which they will continue to depend on wireless to serve their communications needs, combined with the increase in the number of mobile voice customers who will also want access to non-voice applications. Specifically:

- As competition increases penetration of cellular and PCS mobile services will also increase, along with usage, further reducing the opportunity for current licensees to develop next-generation IMT-2000 type services in their currently licensed spectrum. Current operators should not be precluded from offering advanced services where possible. However, it is unlikely that under the current cap on spectrum licensing, there will be sufficient spectrum to support all of the services envisioned in the future.
- As "wireless follows wired," users will demand mobile access to the applications they use most on a wired basis, such as e-mail, e-commerce and internet/intranet browsing. These new wireless data applications promise to compound the capacity problems associated with continued growth in voice subscribers.

It will be very difficult to set aside sufficient spectrum to evolve to these next generation services while continuing to meet the growing needs of existing customers. With the 45 MHz cap, both 25 MHz cellular and 30 MHz PCS licensees have a single option for adding capacity: obtaining a 10 MHz PCS license. However, most of these licenses, particularly in major markets, have already been acquired by operators for the purpose of extending their coverage or to provide other competitive services. Clearly, additional spectrum will be required and lifting the caps will create opportunities for current providers to utilize existing spectrum, either by acquisition or through partnering with other licensees.

3RD GENERATION WIRELESS SERVICES

Worldwide attention has turned increasingly towards the development of Third Generation (3G) wireless systems. These systems fall under the IMT-2000 standards umbrella, as defined by the International Telecommunications Union (ITU). The vision for 3G services addresses both fixed and mobile wireless services, and for the latter the ability to move seamlessly through the home, office, and outdoor environments with a single device while maintaining access to a wide variety of multimedia services.

A clear implication of fully implementing 3G will be the need for new spectrum on par with and potentially surpassing the bandwidth secured for today's first and second generation systems.

At the recently completed WRC-2000, in recognition of growing consumer demand for multimedia applications and a wide range of services (e.g. video-teleconferencing, high speed Internet, speech and high rate data), the ITU adopted IMT-2000 standards that are inclusive of varying technologies and platforms, best enabling existing systems to operate with the next generation of wireless standards. Commonly referred to as 3G, these standards have become the worldwide vision of a global advanced mobile communications service for the 21st century containing the following key features:

- high degree of commonality of design worldwide;
- compatibility of services within IMT-2000 and with the fixed network;
- toll quality voice service;
- data speeds up to 2 Megabits per second ("Mbps");
- small terminals for worldwide use;
- worldwide roaming capability.

In its Petition recently filed with the FCC, the Cellular Telecommunications Industry Association (CTIA) requested that the FCC immediately initiate a Rule Making, stating that designation of additional spectrum for commercial mobile wireless telecommunications service is vital because current and future scheduled spectrum allocations in the United States are neither sufficient for development of new 3G services, nor in harmony with likely worldwide implementation of IMT-2000. Failure to keep pace with world identification of spectrum for IMT-2000 or to harmonize U.S. IMT-2000 frequency bands with the rest of the world will harm U.S. consumers, manufacturers, and service providers.

FUTURE SPECTRUM ALLOCATIONS

700 MHz

As a result of the Balanced Budget Act of 1997 (BBA), the FCC reallocated spectrum formerly assigned to TV channels 60 to 69. Channels 60 to 62 and 65 to 67 were designated for commercial use while the remaining channels were designated for the exclusive use of public safety. The 700 MHz band is particularly interesting as a space to foster the deployment of 3rd Generation, or 3G, services. The spectrum's excellent propagation characteristics make it ideal for Internet services.

In its NPRM released in mid 1999, the Commission proposed service rules for commercial licensing of the 746 to 764 MHz and 776 to 794 MHz bands for potential provision of fixed, mobile and broadcasting. However, for consumers to fully extract the benefit of this truly exceptional spectrum opportunity for next-generation services, service providers need clear access to the spectrum.

The Balanced Budget Act specified this spectrum be auctioned in 2001. However, the Year 2000 DOD Appropriations Bill called for moving up this auction into year 2000.

The Commission's efforts to expedite the 700 MHz proceeding to meet this Congressionally imposed mandate are laudable. The FCC has worked diligently to auction the 700 MHz band in full compliance with Congress' objectives. The auction, after one delay already, is scheduled to commence September 6, 2000, and bidders must register by August 1, 2000. However, the required auction and service rules are very complex and may contain conflicts and ambiguities that require further

clarification from the FCC. It also includes a combinatorial bidding format that is new and uncertain to even experienced bidders.

As a matter of sound spectrum management policy, however, the rush to auction the 700 MHz spectrum will jeopardize the efficient assignment of the spectrum and disserve the public interest. In addition to the aforementioned auction issues requiring answers, another significant unresolved issue concerns the matter of "clearing". As noted above, this spectrum is currently encumbered by television transmissions. In order to free the spectrum for 3G use, over 100 channels must first be vacated by these incumbent broadcasters. Without clearing, the 700 MHz band will remain virtually unusable until the conclusion of the Digital Television (DTV) transition period scheduled for the end of 2006, and may extend well beyond 2006 due to delays in the DTV transition. The Commission is now seeking comment on the establishment of voluntary band-clearing mechanisms to facilitate the early availability of these bands for commercial wireless services while promoting efficient migration to DTV. However, a final decision by the Commission is not likely before November 2000, at which time the auction will likely be over.

Because Congress has indicated that its budgetary goals have already been met, the Commission and Congress should work together to postpone the 700 MHz auction into fiscal year 2001.

C&F Block Spectrum

Fully as important, the Commission has not yet completed the 1.9 GHz PCS C and F Block rulemaking proceeding. Certainty in this proceeding is crucial for auction planning at 700 MHz. Both auctions will offer up to 30 MHz of spectrum in bands ideal for a broad variety of mobile and wireless applications. Potential bidders in the 700 MHz auction should be fully informed of the terms and conditions for the scheduled November 29, 2000 reduction of C and F Block PCS licenses prior to the start of the 700 MHz auction. This information is necessary to formulate appropriate business plans. Therefore, it is not in the public interest to initiate the 700 MHz auction until interested parties can formulate their own individual spectrum acquisition plans based on the final eligibility and availability restrictions of the C and F Block spectrum vis-à-vis the 700 MHz commercial spectrum.

CONCLUSION

Some wireless operators, including SBC Wireless, are already experiencing spectrum shortages simply trying to cope with increasing demand for current services. New opportunities and the anticipated demand for new higher bandwidth services promise increased spectrum shortages in the future. Demand for more spectrum for these services will likely exceed even the increased capacity achieved through operational improvements and technical innovation in major metropolitan markets leaving consumers without full access to the services they desire.

As noted, other countries have already committed significant blocks of spectrum to future services anticipated under IMT-2000. It is in the public interest that the United States not fall behind the rest of the world in making spectrum available for new services. Today wireless operators are beginning to offer wireless data services. Although these services are not at the bit rates envisioned over an IMT-2000 compliant network, the fact remains that wireless data services will grow steadily over the next 10 years. In the interest of consumers, service providers need to be prepared to accommodate that growth through the judicious implementation of sound spectrum policy that promotes the most efficient use of all available spectrum.

Mr. TAUZIN. Thank you very much, Mr. Smith.

Next we will hear from Mr. Dennis Strigl, President and Chief Executive Officer of Verizon Wireless in New Jersey.

Mr. Strigl.

STATEMENT OF DENNIS F. STRIGL

Mr. STRIGL. Thank you very much, Mr. Chairman and members of the subcommittee. Thank you for inviting me to give my perspective on spectrum management.

I would like to make one and only one main point in my testimony. That is that the wireless industry's continued ability to provide critical benefits to the American public, and the Nation's economy for that matter, depends on gaining more radio spectrum.

Let me just comment if I may on why this matters. There really are two reasons.

First, the wireless industry is providing critical benefits to the American public and to the economy. Second, the wireless industry's ability to continue to grow and provide new services and new benefits to the public and the economy depends upon access to considerably more radio spectrum.

The benefit to the American public can be, I think, best illustrated by one statistic and Congressman Markey gave it this morning. There are more than 100,000 emergency calls that are now being made from wireless phones, and that is every day.

Customers, and your constituents, I might add, are increasingly relying on wireless services, not only for business and for personal calls, but also as a lifeline in emergencies.

There are more than 90 million wireless subscribers in the United States today alone and market experts predict that the U.S. penetration could double to as much as 70 percent or even more in the next few years. In fact, there are some European markets that are rapidly approaching those kind of wireless penetration levels.

The cumulative capital investment today exceeds $70 billion. Hundreds of thousands of jobs have been created in this industry and in supporting industry and that has occurred over the past few years.

The future for us holds even greater promise. Innovative wireless technologies are being developed that will provide consumers with the next generation of wireless services, delivering high speed, high bandwidth data and multimedia applications, including wireless Internet access, location services, real-time traffic information and even access to large data files.

Now, the downside of the success story is that it puts a tremendous strain on the critical resource that we have which is spectrum.

The amounts of spectrum originally allocated to cellular and PCS carriers will not be enough to meet the accelerating demand for airtime, let alone the next generation of services which are quite spectrum intensive.

The bottom line, Congress needs to take actions that will enable the wireless industry to grow and obtain usable and unencumbered spectrum which is needed to meet the American public's demand for wireless communications.

There are actually three concrete steps that Congress and the FCC should take and I believe they should be taken now.

First, and most immediate, is to insure the spectrum that becomes available is usable. To that end, I would say defer the 700 MHz auctions. This spectrum is simply unusable because much of it is already being used, as we talked this morning, by the television broadcast stations who are not obligated to move to lower channels under the current digital television rules until at least the year 2006.

The action is urgently needed because without it the FCC will begin the process for auctioning off this spectrum on August 1, selling off such severely encumbered spectrum makes absolutely no sense. It will severely depress the value of the spectrum and decrease the revenues that the Federal Government will receive.

I would ask that Congress today urge the FCC to delay the September auction date to allow the FCC, broadcasters and the industry time to work out a solution to this problem. It must do it now because the deadline is imminent and the FCC, as we heard this morning, is moving ahead.

As Congressman Boucher pointed out this morning, the FCC has the discretionary authority, we believe. They needs to be urged by Congress to use that authority.

While the industry needs the spectrum sooner, I would just stress that it has to be usable spectrum.

The second action that I would urge is for Congress to repeal the FCC spectrum cap. We talked at length about that this morning. Let me just say that it is a critical needs, I believe, for everyone in the industry to do away with the old rules, get on with the new way of operating.

We know, my company alone within the next year needs 65 MHz of spectrum in order to operate and introduce new benefits and new services to the American public.

So in summary, I think the Congress must act and act quickly to adopt market-driven spectrum policies that promote the development of advanced wireless technologies and services.

I urge Congress to defer the 700 MHz auctions, repeal the spectrum cap so that future auctions, including the C- and the F-block auction are open and fair. Also, I would ask that Congress direct the FCC and the NTIA to determine how the 3-G frequency bands will be used to the benefit of the American public, the economy and our competitiveness in global communications, the worldwide market overall.

Thank you very much.

[The prepared statement of Dennis F. Strigl follows:]

PREPARED STATEMENT OF DENNIS F. STRIGL, PRESIDENT AND CEO, VERIZON WIRELESS [1]

Mr. Chairman and Members of the Committee, thank you for inviting me to give my perspective on spectrum management policy. I want to make one and only one point in my testimony:

The wireless communications industry's continued ability to provide critical benefits to the American public and the nation's economy depends on gaining access to more radio spectrum.

Congress should act quickly to increase the supply of useable spectrum that is available for our industry to purchase, and allow all companies to compete for that spectrum, so that we can respond to the public's growing demand for wireless voice and data services. It should:

1. *Defer the 700 MHz auction.* This is urgent, because without Congressional action, the FCC will auction this spectrum in less than two months, even though the *same spectrum* is already largely occupied by television stations. We need spectrum, but we need useable spectrum. A premature auction will deprive the U.S. Treasury of much of the value of this spectrum. Policy makers, broadcasters and the wireless industry need time to find ways to make that spectrum useable.

2. *Repeal the FCC "spectrum cap."* The FCC continues to enforce a limit on the amount of spectrum any carrier can own, even though the rule long ago achieved its purpose, and now only impedes carriers from competing for the spectrum they will need to meet future growth in demand for data and other new services.

3. *Transform the success of WRC-2000 into new spectrum for new wireless services.* The May 2000 world radio conference achieved important victories for the U.S. in securing international agreement on the bands available for "Third Generation"

[1] Verizon Wireless is a newly formed joint venture of Verizon Communications and Vodafone AirTouch. It combines the U.S. wireless properties of these companies to form the nation's largest wireless network, covering more than 90% of the U.S. population.

services. The U.S. needs to seize on these victories quickly by designating more bands for 3G and licensing them.

The wireless industry is providing critical benefits to the American public and the economy.

This point can be illustrated with one statistic: More than 100,000 emergency calls are now being made from wireless phones *every day.* Customers (and your constituents) are increasingly relying on wireless services not only for business and personal calls, but as a lifeline in emergency situations.

That growth is astounding: There are more than 90 million wireless subscribers in the United States alone, and the number of minutes of calls continues to accelerate. Cumulative capital investment exceeds $70 billion. Market experts predict that U.S. penetration could double to as much as 70% or even more in the next few years, a level that a number of European markets are already rapidly approaching. Digital technology has been a catalyst. The capacity and efficiency of our networks have increased, handset features and choices have been enhanced, battery time has lengthened and equipment size and cost have been reduced. Wireless services have become a part of many customers' daily routine, often used by customers as an alternative to picking up a wireline telephone.

This has been accompanied by a tremendous surge in usage. Between 1995 and 1999, the average monthly minutes of use per subscriber at one of Verizon Wireless's predecessor companies, Bell Atlantic Mobile, increased by 122%, from 79 minutes to over 175 minutes. During the same period, the average price for these minutes of use, considering both monthly access and per minute usage charges, dropped by 60%. These trends, together with the continued rapid growth of the subscriber base, explain why, between calendar years 1995 and 1999, the total minutes of use jumped over 320%, from about 2.7 billion minutes to 11.7 billion minutes annually.

The benefits that the wireless industry has provided to the American economy flow from the ability of our industry to grow and serve the public. Hundreds of thousands of jobs have been created in this industry and supporting industries over the past few years. Verizon Wireless is a good example: our company alone employs about 30,000 people. The contributions that this industry have made to the long success of the U.S. economy have been well-documented by economists, the FCC and others.

The future holds even greater promise. Innovative wireless technologies are being developed that will provide consumers with a wide range of high-speed data and multimedia applications, including wireless Internet access. To fulfill our customers' anticipated demand for high-speed, high-bandwidth data services, the key is Third Generation (3G) high-speed data technology. The wireless industry's existing Second Generation CDMA technology can only deliver raw data rates that average 14.4 kilobits per second. The 3G technologies presently under development hold out the promise of a dramatic improvement in data rates, liberating consumers from "plugged in" PC's. In addition to e-mail and general internet access, wireless broadband means location services such as tailored, real-time traffic information, access to large data files, and greatly enhanced point of sale information. High-speed broadband access involves shorter response times and quicker and fuller information flow.

The wireless industry's ability to continue to grow and provide new services to benefit the public and the economy depends on access to considerably more radio spectrum.

The downside of this success story is that it has put tremendous strain on the industry's critical resource: spectrum. All of our services depend on having the spectrum capacity to meet the demands of our customers. Without enough of it, we will not be able to provide the services customers want at the level of quality they expect and deserve. The amounts of spectrum originally allotted to cellular and PCS will not be enough to meet the accelerating customer demands for airtime.

The problem is growing because of the transformation of the wireless industry from primarily a voice service to a technology that provides data, including e-mail, messaging and Internet access, as well as voice traffic. Verizon Wireless seeks access to new spectrum to implement plans to introduce the next generation of wireless services—the broadband voice and data services known as Third Generation, or 3G. At the same time, we must also accommodate the tremendous surge in voice usage we are experiencing.

Data applications are very spectrum-intensive, and the higher-speed data technologies that are being developed require many times the spectrum that voice or conventional slow-speed data need. The great promise of access to data communications anytime, anywhere will be affected if wireless service providers cannot obtain more spectrum resources.

Congress needs to take actions that will enable the wireless industry to grow and obtain the spectrum it will need to meet the public's demand for wireless communications.

Federal law vests the Congress, and through it, the FCC, with the responsibility to manage spectrum resources for the benefit of the American people. It is an important responsibility, because wireless communications have already affected all of our lives, and are now a major component of the national economy. Congress needs to take steps that will ensure that the supply of the key resource for wireless communications, spectrum, is available. This will have benefits not only to individuals, their businesses, and the economy, but it will help promote the competitiveness of the U.S. in the increasingly global telecommunications market. Other nations have already allocated and licensed sufficient amounts of spectrum to meet the needs of their wireless industries. The U.S. must do the same. There are three concrete steps that Congress should take now.

1. Defer the 700 MHz auction.

Deferral is urgently needed, because without it, the FCC will begin the process of auctioning this spectrum on August 1. This spectrum remains already largely occupied by television broadcast stations. Aside from being clearly unwise spectrum policy, selling off encumbered spectrum will severely reduce the value of the spectrum and thus decrease the revenues that the federal government will receive.

Under an appropriations act enacted early in 1999, Congress directed the FCC to auction spectrum currently used by nearly 100 UHF TV stations on Channels 60-69 by September 30, 2000, and the FCC thus feels compelled to begin the auction that month—even though the Budget Committee has indicated the revenues are not needed or anticipated in this fiscal year. Auction applications are due August 1. But much of that spectrum is simply unuseable, because it is currently being used for television. Broadcasters are not obligated to move to lower channels as part of the digital television rules until at least the end of 2006, and in some situations much longer. I am attaching to my testimony a map that demonstrates the areas that are protected against interference to these stations. In those areas, we are concerned that we may be largely precluded from providing mobile service.

Auctioning spectrum that is so severely encumbered not only makes no sense, but it will significantly depress the revenues from the spectrum. The auction will fail to deliver anywhere close to the real dollar value of that spectrum to the U.S. Treasury.

Congress needs to repeal the September 30 deadline to allow the FCC, broadcasters and our industry time to work out a solution to this problem; only then should the auction occur. It must, however, do so now, because the deadline is imminent, and the FCC is moving ahead.

There is another reason to defer the auction. The FCC is planning to use a new bidding scheme, combinatorial bidding, that is extremely complex and has never before been used. My company has many questions about the procedures that the FCC intends to use in this auction, yet there has been no time to obtain clarity since the FCC just published the combinatorial bidding rules two weeks ago. Conducting an auction before all parties and the FCC are clear on the ground rules is a recipe for problems.

The FCC has already decided that it will permit broadcasters and wireless service providers to negotiate voluntary agreements that would facilitate the early availability of this spectrum for commercial wireless service while promoting efficient migration to DTV. It is also seeking comment on the use of other voluntary mechanisms to clear the spectrum, but it has set a deadline for comments that do not end until mid-September, after the auction is underway. Therefore, the Commission is unlikely to reach any decisions until long after the auction is over. The Commission must be given more time to thoroughly consider all its rules before auctioning these licenses.

The current schedule for the auction will already result in the U.S. Treasury receiving the auction receipts outside of fiscal year 2000. Delaying it for a year will not undermine budgetary objectives, while creating greater certainty for bidders, greater interest in the auction, and ultimately greater benefits for American consumers and taxpayers. I urge Congress to extend the deadline for this auction until September 2001.

2. Repeal the FCC "spectrum cap."

Unfortunately, outdated rules still exist that restrict our ability to acquire the spectrum resources we expect we will need to provide 3G and other new services. The FCC's "spectrum cap" rule, which dates from 1994, prohibits any company from holding more than 45 MHz of cellular, PCS and specialized mobile radio (SMR)

spectrum in the same geographic area, with a higher limit of 55 MHz in rural areas. The non-uniform nature of the size of license areas and licensed bands further prevent carriers from approaching even these caps in their full footprint. This economic regulation was not imposed by Congress. To the contrary, in the 1993 Omnibus Budget Reconciliation Act, Congress had replaced traditional wireless regulation, such as entry and price controls, with a competitive, market-driven model.

The "cap" is an outdated vestige of a time, years ago, when there was considerably less wireless competition. Today, however, the industry is one of the most vigorously competitive in the nation. Prices have fallen dramatically, and new and enhanced service features are introduced into the market every day. In his February 28, 2000 speech to CTIA's annual convention, FCC Chairman William Kennard characterized the wireless industry as "the poster child for competition." In its 1999 Competition Report, the FCC reported that more than 75% of the U.S. population is served by at least 5 wireless service providers and more than 93% of the population is served by at least 4 wireless service providers. In the Washington, D.C. market, for example, we hold one license and compete against SBC, AT&T, Sprint and Nextel.

Today, the cap threatens to constrain our ability to grow to meet demand and offer new services. It threatens to impair the very competition that it was intended to promote and to penalize carriers for their competitive success. My company and many others are restricted from bidding on new spectrum that we can use productively to serve the public. Lifting the cap, and allowing an open and fair auction of available spectrum, will favor innovation and competition in the wireless industry and yield the highest auction revenues by allowing any firm that values the spectrum to bid.

I want to thank Congressman Stearns for introducing the spectrum cap legislation and to thank you, Mr. Chairman, and others who have co-sponsored the bill. I urge the Committee to pass this important piece of legislation. By doing so, it will promote a more competitive auction for the "C" and "F" block PCS licenses that the FCC has scheduled for this coming November. The bill meets the need for a full, fair, and open auction that permits all interested carriers to bid, by lifting all bidding restrictions.

The "C" and "F" block licenses are particularly suitable for 3G services, since the PCS band has been identified globally for that purpose. We need to be able to make our business plans based upon the opportunities and the needs of this exploding market and to meet the global competition that 3G will intensify. U.S. competitors are at a significant disadvantage relative to our non-U.S. counterparts. For example, as a result of the recent 3G auction in the United Kingdom, the four national wireless providers now have as much as 90 MHz of spectrum, double the amount permitted under the U.S. spectrum cap.

The spectrum cap's adverse impact on budgetary policy is obviously a matter of supply and demand. It reduces auction revenues by excluding carriers that are likely to place the highest value on the new spectrum.

In short, the spectrum cap rule is not only no longer necessary; it threatens to impede my company's ability to obtain the spectrum we need to serve the public. Competitive industries require market-driven policies, not outmoded regulation. Spectrum caps pick winners and losers by allowing some to bid on new spectrum while excluding others. Such policies penalize the most successful carriers by denying them access to the additional spectrum resources we need to remain competitive and offer new services.

3. Capitalize on the Decisions of WRC-2000.

Substantial amounts of additional spectrum are needed to support 3G wireless services. The wireless industry, working with the U.S. Government, estimated that at least 160 MHz of additional spectrum will be needed over the next decade in addition to the current cellular and PCS bands. And, the U.S. is not alone in recognizing the need for more spectrum. Last month, governments from around the world met at the World Radiocommunication Conference (WRC-2000) in Istanbul, Turkey. The Conference, which established proactive policies for the development of 3G services, was a major success for the U.S. It identified two key bands to accommodate the future development of 3G technologies and services—a significant step toward meeting future market demand and promoting worldwide spectrum harmonization.

These actions are encouraging, but we cannot claim victory yet. Important steps must now be taken domestically to implement the decisions made at WRC-2000. The U.S. Government must work diligently to complete its spectrum studies and make decisions about what spectrum it will make available in the U.S. for 3G. This process must occur soon, and it must consider the entirety of the subject bands. Piecemeal treatment would be unfortunate and counterproductive. My company stands ready to assist the FCC and NTIA in these efforts. Failure to complete these studies

and license this spectrum quickly will place the U.S. behind the rest of the world in the deployment of advanced mobile technologies and services. What is at stake is the ability of consumers to benefit from these new technologies and services and of the U.S. to reestablish its leadership in the wireless marketplace.

CONCLUSION

Congress must act now to adopt market-driven spectrum policies that promote the development of advanced wireless technologies and services. I urge Congress to (1) defer the 700 MHz auction, (2) repeal the spectrum cap this year so that future auctions, including the upcoming "C" and "F" block auction, are open and fair, and (3) direct the FCC and NTIA to determine how the 3G frequency bands will be used to the benefit of the American public, the economy, and our competitiveness in the global communications market.

Mr. TAUZIN. Thank you, Mr. Strigl.

Next will be Mr. Rudy Baca, Global Strategist for the Precursor Group here in Washington, DC. Mr. Baca.

STATEMENT OF RUDY L. BACA

Mr. BACA. Thank you. Mr. Chairman and members of the subcommittee, thank you for the honor of testifying before your subcommittee today on the subjects of H.R. 4758 and spectrum policies for the 21st Century.

I am Rudy Baca, analyst with the Precursor Group. The views expressed here are mine alone. By way of introduction, the Precursor Group is an independent employee-owned controlled research company structured to avoid financial conflicts of interest inherent in Wall Street research.

In that context I offer the following insights and observations in hopes that they will be useful to the subcommittee.

The Spectrum Resource Assurance Act, H.R. 4758, recognizes that wireless communications providers in the United States are at a competitive disadvantage with their foreign counterparts because of a lack of adequate radio frequency spectrum.

Spectrum is the life blood of wireless services. But not all radio frequency spectrum is equally useful or available. Spectrum management policies determine the rules of the game. That is, who can play, how much spectrum they will get, and where it will be located.

Governments have traditionally managed radio frequency spectrum as a public resource for the common good. A coherent, efficient forward-looking spectrum management policy and process is critical for U.S. wireless operators to be able to compete in providing global, interconnected, seamless advanced communications.

Technologically sound spectrum policies allow for the competitive provision of communication services which benefits the public with rapid deployment of innovative offerings at fair prices.

Conversely, antiquated and ad hoc spectrum decisions can hinder development and delay or even deny services to the public by predetermining winners and losers or handicapping some providers unfairly.

The world is on the cusp of the rollout of Third Generation wireless services. Third Generation, also known as IMT-2000 and UMTS promise one, wireless Internet access; two, increased data utility; and three, video capability from a handheld communications devise.

The governments of the European community and Japan in particular view 3-G as an opportunity to leapfrog the U.S. dominance of the Internet and e-commerce by building upon higher wireless penetration rates for second generation digital cellular, that is PCS outside of the United States.

The agencies responsible for spectrum management in the U.S. must rapidly streamline the spectrum identification, allocation and licensing processes if the U.S. operators are to be able to compete and meet this challenge successfully.

The reality of spectrum management in the U.S. in 2000 and for the foreseeable future is one of chronic spectrum shortages, especially compared to most of the rest of the world. These shortages are the result of intensive spectrum usage in the U.S. for both commercial and government purposes.

This means that the U.S. suffers one, from an availability imbalance, and two, from a commercialization imbalance. The availability imbalance springs from the U.S. role as the sole remaining global super power. National and global commitments require tremendous ongoing and increasing use of radio frequency for security and defense purposes.

These legitimate needs mean that very large portions of the radio frequency spectrum are simply off limits for commercial that is non-government use.

Accordingly, spectrum management policies in the U.S. must be even more efficient and targeted in identifying usable spectrum, allocating it for wireless services, harmonizing the uses with other countries and clearing the bands by relocating incumbent users, licensing and assigning that spectrum for commercial.

Unencumbered spectrum is almost non-existent in the U.S. So new services must either be squeezed into already licensed spectrum, that is, shared spectrum among technologically compatible users or incumbent users must be relocated to other frequency bands.

In summing up, what I would like to say is that the investment community is well aware of these imbalances that are occurring and you are going to see a very dramatic effect on the ability of U.S. providers to compete.

The government programs and policies outside of the United States have specifically targeting Third Generation as a way for their providers to not only catch up to but to surpass U.S. providers.

It is absolutely critical that spectrum reforms such as the spectrum cap be looked at as the hindrances that perhaps may have served at a time when the U.S. was transitioning from a duopoly into a competitive marketplace but are now thwarting competitive U.S. provision of communication services with ongoing global communications development.

Thank you very much.

[The prepared statement of Rudy L. Baca follows:]

PREPARED STATEMENT OF RUDY L. BACA, THE PRECURSOR GROUP

Mr. Chairman, thank you for the honor of testifying before your Subcommittee on H.R. 4758 and Spectrum Policies for the 21st Century. I am Rudy Baca, Global Strategist with The Precursor Group®. The views expressed here are mine alone.

I request that my full written testimony be printed in its entirety in the hearing record.

By way of introduction, The Precursor Group® is an independent, employee owned and controlled research company structured to avoid the potential financial conflicts-of-interest inherent in Wall Street research. The Precursor Group® does no investment banking, money management, proprietary trading, or stock picking. We help institutional investors anticipate change in regulation, technology, competition, and globalization so that they can invest more proactively than reactively. In that context, I offer the following insights and observations in hopes that they will be useful to the subcommittee.

I. THE UNITED STATES IS RELATIVELY DISADVANTAGED BY SPECTRUM SCARCITY

The Spectrum Resource Assurance Act, H.R. 4758, recognizes that wireless communications providers in the United States are at a competitive disadvantage with their foreign counterparts because of a lack of adequate radio frequency spectrum. Spectrum is the "life blood" of wireless services. But not all radio frequency spectrum is equally useful or available. Spectrum management policies determine the "rules of the game," that is, who can play, how much spectrum they will get and where it will be located.

Governments have traditionally managed radio frequency spectrum as a public resource for the common good. A coherent, efficient, forward-looking spectrum management policy and process is critical for U.S. wireless operators to be able to compete in providing global interconnected seamless advanced communications. Technologically sound spectrum policies allow for competitive provision of communications services, which benefits the public with rapid deployment of innovative offerings at fair prices. Conversely, antiquated and ad hoc spectrum decisions can hinder development and delay or even deny services to the public by predetermining winners and losers or handicapping some providers unfairly.

The world is on the cusp of the rollout of Third Generation (3G) wireless services. 3G (a/k/a IMT-2000 and UMTS) promises wireless Internet access, increased data utility, and video capability from a handheld "communications device". The governments of the European Community and Japan, in particular, view 3G as an opportunity to build upon higher wireless penetration rates for Second Generation digital cellular (PCS) outside the U.S., to leapfrog the U.S.'s dominance of the Internet and E-commerce.

The agencies responsible for spectrum management in the U.S. must rapidly streamline the spectrum identification, allocation, and licensing processes if U.S. operators are to be able to meet this competitive challenge successfully.

II. WHY THERE'S A PROBLEM WITH SPECTRUM SCARCITY IN THE U.S.?

The reality of spectrum management in the U.S. in 2000, and for the foreseeable future, is *chronic spectrum shortages,* especially compared to most of the rest of the world. These shortages are the result of intensive spectrum usage in the U.S. for both commercial and government purposes. This means that the U.S. suffers an (1) availability imbalance, and a (2) commercialization imbalance.

Availability Imbalance. The U.S. is the sole remaining global superpower. National and global commitments require tremendous on-going and increasing use of radio frequency spectrum for security and defense purposes. These legitimate needs mean that very large portions of the radio frequency spectrum are "off-limits" for commercial (non-government) use. Accordingly, the spectrum management policies in the U.S. must be even more efficient and targeted in identifying usable spectrum, allocating it for wireless services, harmonizing uses with other countries, clearing the bands by relocating incumbent users, and licensing ("assigning") spectrum for commercial use.

Unencumbered ("virgin") spectrum is almost non-existent in the U.S., so new services must either be squeezed into already licensed spectrum—that is, spectrum is "shared" among technologically compatible users—or, incumbent users must be relocated to other frequency bands. Both necessitate consistent and intensive spectrum management. In addition, domestic allocations must be "harmonized" with international allocations to facilitate roaming and minimize interference. To function effectively, the responsible agencies must make the required resources available to manage these processes.

Commercialization Imbalance. Spectrum management in the U.S. is a more complex, and therefore prolonged, process than in most countries because of the previously noted scarcity of usable spectrum and also the many U.S. regulatory "managers" with conflicting goals. Unlike almost all other countries, where one entity is responsible for spectrum management, the U.S. spectrum management policy proc-

ess involves numerous participants. The **FCC** manages commercial uses of spectrum, including some public safety uses; **NTIA** manages governmental uses, including Department of *Defense,* and the **national security** agency uses; the Department of **State** "coordinates" international communications agreements, including treaties; and, more recently, the **USTR** is responsible for trade aspects of communications. All impact spectrum management to varying degrees, with the FCC and NTIA being the principal managers.

Reconciling the oftentimes divergent interests of these entities is done on a generally informal and *ad hoc* basis. While that may have sufficed in a pre-mobile hard wired telephone voice communications world dominated by monopoly national operators, a more efficient and consistent spectrum management policy process is needed in the increasingly global virtual village of modern mobile digital voice, data, and video communications if U.S. operators are going to be able to compete effectively. Otherwise, this regulatory imbalance between the U.S.' spectrum management approach and that of the rest of the world will continue to handicap U.S. operators in providing advanced global and domestic communications services such as 3G.

III. WHAT CAN BE DONE TO CORRECT THE IMBALANCE?

Spectrum management policy and practice reform could ameliorate the competitive disadvantage caused by spectrum scarcity and ad hoc multi-regulator spectrum management. Comprehensive reform could include rationalizing and streamlining the process with emphasis on expedited *technical recommendations and evaluations* such as "sharing studies".

The private sector could be more fully engaged in all aspects of the process. For example, although the private sector has recently been given an increased "advisory" role, the ITU (International Telecommunication Union) remains a government-dominated bureaucracy under the United Nations. The government Members are adept at leveraging the one country/one vote ITU system into regional blocs that cut against the lone U.S. positions that increasingly seek "multi-band" approaches borne of U.S. scarcity of contiguous spectrum. The U.S. has been remarkably successful in advocating its spectrum policies internationally, but faces a much more difficult task as spectrum management processes exacerbate spectrum scarcity for new advanced mobile communications. Technological development now operates on "Internet time," while U.S. spectrum management is encumbered by bureaucratic delay and legacy prohibitions such as the FCC's Spectrum Cap. Removal of the Spectrum Cap pursuant to H.R. 4758 and other spectrum management reform could help correct the spectrum imbalances hindering U.S. operators.

Mr. Chairman, thank you again; it is an honor to testify before your Subcommittee.

Mr. TAUZIN. Our final witness is Mr. Mark Kelley, Chief Technology Officer of Leap Communications International who is speaking for the PCIA, the Personal Communications Industry Association here in Alexandria, Virginia.

Mr. Kelley.

STATEMENT OF MARK KELLEY

Mr. KELLEY. Thank you, Mr. Chairman and thanks to the committee for allowing me to speak today, particularly on the impact of H.R. 4758, the Spectrum Resource Assurance Act.

I am the Chief Technical Officer of Leap Wireless in San Diego. I want to tell you just a little bit about the services that we offer and what we are doing. It is going to be in a bit of a contrast to what you have heard from some of the others today.

Leap Wireless is a wireless communication carrier. We deploy, own and operate wireless networks in domestic and international markets with strong growth potential. We purchased 36 licenses in the 1999 C-block reauction. We are purchasing additional licenses throughout the United States.

Through our subsidiary, Cricket Communications, we are planning on offering an innovative service to 35 of those markets within the next year.

Cricket has already introduced an innovative, local wireless service known as "The Around Town Phone" to residents of Chattanooga and Nashville. What we are offering in Chattanooga and Nashville is what we are going to be offering in all the other markets where we own spectrum in the United States.

What we are able to do in 10 MHz a spectrum is to offer unlimited, unlimited wireless voice service for $29.95 a month and in doing that we have provided an opportunity for a lot of Americans who haven't previously been able to afford wireless service to have wireless service. We are doing that in 10 MHz of spectrum in many markets.

One of a couple of the issues that I would like to talk to you today is: How much spectrum do you really need for voice. The issue was raised several times this morning, in particular, Mr. Sawyer had led a discussion about the efficiency of the spectrum and isn't it incumbent upon the people that hold that spectrum to be efficient with it?

Briefly, with our 10 MHz of spectrum, we are offering unlimited service to what we believe will be up to 20 percent of any one market. That is after accounting for some of the deployment challenges and so forth that all wireless carriers have.

The most important thing to emphasize here is that the future technologically is even better. There are two or three technological developments that are underway right now that are going to provide up to 6X more capacity in the existing spectrum and I want to talk about just a few of those.

One is the first phase of 3-G which is known as 1XRTT, sometimes called 2.5-G. but what 1XRTT is going to do is permit us to essentially double the amount of users that we can put in the spectrum today.

The next development is a new compression of vocoder development which is going to give us another 50 percent more capacity beyond 1XRTT.

Finally, something Mr. Hatfield and the panel this morning referred to, there is a thing called "smart antenna" technology which is going to allow up to two or three times more capacity above and beyond that.

Incidentally, with regard to smart antenna technology, it is already being used in several other places in the world for people to add capacity to their own systems. It was the method of pointing the antenna specifically at the users.

So between our efficient use of spectrum and what we know is going to be possible in the next several years, we believe that we can handle quite a bit, even more than the 20 percent that we are handling right now with our 10 MHz of spectrum.

We also believe were we to acquire even another ten MHz in the regions where we don't have more, that we could offer wonderful wireless data service as well. Briefly about wireless data, a lot of discussion this morning and indeed this afternoon, has focused on the U.S.'s position relative to other countries with respect to high speed wireless data services.

There is technology available that will be rolled out commercially next year that will allow up to two megabytes per second, in a one and a quarter MHz channel, which would allow carriers such as

ourselves to offer high-speed, 3-G-like services within our own spectrum band.

Really, what will occur then when this equipment is available commercially is that you will see rolled out by not only ourselves, but mostly the other carriers who have adopted the same technology and it will be applications and services that are riding on top of this high-speed data.

It is really the spectrum cap that allows smaller carriers such as ourselves to be able to play in a market with the other much larger carriers.

So in conclusion, and I didn't mention the designated entity status, we are a DE. We do believe that the set asides are also equally critical for our own survival. But we believe that the technology today and tomorrow allows you to do a ton in 45 MHz.

Thank you very much.

[The prepared statement of Mark Kelley follows:]

PREPARED STATEMENT OF MARK KELLEY, CHIEF TECHNICAL OFFICER, LEAP WIRELESS INTERNATIONAL

Good morning, Mr. Chairman and members of the Committee. Thank you for inviting me here today to discuss FCC spectrum policies and the potential impact of H.R. 4758, the Spectrum Resource Assurance Act. My name is Mark Kelley. I am Chief Technical Officer of Leap Wireless International of San Diego, California.

Leap Wireless is a wireless communications carrier that deploys, owns, and operates wireless networks in domestic and international markets with strong growth potential. Leap purchased 36 FCC licenses in the 1999 PCS C Block re-auctions and is purchasing additional licenses throughout the United States. Through its subsidiary, Cricket Communications, Leap plans to offer its innovative service in 35 markets by the end of 2001.

Cricket has already introduced an innovative local wireless service offering, known as Around-Town Phone Service, to residents of Chattanooga and Nashville, Tennessee. Cricket gives customers the freedom to make all of their local calls for a low, flat rate of $29.95 per month. Cricket customers can also choose to receive voicemail, caller ID, and call waiting services at a price that is competitive with traditional landline service. By tapping into large underserved markets like Chattanooga and Nashville, Cricket seeks to achieve rapid penetration growth. At the same time, Cricket also intends to re-shape the economic models of wireless service by lowering the costs of wireless service to the American consumer. Cricket plans to offer its innovative service in 35 markets by the end of 2001.

Leap employs over 200 people in the United States and has over 46,000 subscribers domestically. While still maintaining an operating loss in this build-out stage, the company had revenues of $22 million in 1999 and $3.3 million in 1998. The company began operations in 1998.

As Leap understands the purpose of H.R. 4758, it would prohibit the FCC from applying any spectrum aggregation limits to spectrum purchased at auction today. It would not, however, forbid the FCC from applying its 45 MHz spectrum limits ("spectrum cap") to current licenses and the transfer and assignment of these licenses. This proposal creates an unnecessarily complex dichotomy for a rule that continues to promote local wireless voice and data competition. Companies that exceed the spectrum cap with "new" spectrum purchased at auction would be permitted to expand without limits. In contrast, companies that choose not to participate in auctions could not expand with "old" spectrum garnered through secondary market mechanisms. This dichotomy gives the largest incumbent cellular/PCS operators a tremendous incentive to participate in the upcoming PCS re-auction before they actually need this spectrum. As a result, incumbent operators are more likely to ignore potential spectrum efficiencies in favor of warehousing spectrum.

H.R. 4758 also threatens specific congressional goals for the remaining C and F Block PCS licenses now scheduled for re-auction to designated entities in November. Despite clear guidance from Congress and recent reminders from Chairman Tauzin, Mr. Dingell and many of the members of this Committee, the FCC is on the verge of dismantling a program that is bringing new companies like Leap to the wireless market, thereby denying American consumers the choice and lower prices that new companies offer.

It is not an overstatement to tell you that Leap Wireless, as well as scores of other new wireless carriers, would not be in business today without two crucial spectrum polices: (1) the Federal Communications Commission's 45 MHz spectrum aggregation limits ("spectrum caps") for local cellular, PCS and SMR spectrum holdings; and (2) the PCS C and F Block set-aside program that makes spectrum available to congressionally-identified designated entities.

The FCC adopted the spectrum cap limit coincidentally with its creation of the Personal Communications Service (PCS) rules and Congress' adoption of competitive bidding procedures to award PCS and other commercially used spectrum licenses. (47 U.S.C. § 309(j)). Without the spectrum cap, the two cellular licensees in each local market—one of which is the incumbent local telephone company—would have been free to bid on the new PCS spectrum by using monopoly profits from their phone operations and the duopoly profits from their cellular operations. Ultimately, consumers would have been denied the benefits of new digital networks, lower prices and innovative service offerings.

The FCC determined just last September that it should retain the spectrum cap in order to promote the continued rollout of wireless alternatives and prevent reconsolidation of this market. More specifically, the Commission found that the spectrum cap was providing consumers with several benefits, including:

- Lower wireless prices
- Heightened equipment and service quality
- Accelerated introduction of technological advances
- Efficient and innovative use of the spectrum
- Reduction of spectrum warehousing by carriers

Leap notes that recent evidence indicates that PCS is still in its early rollout state in many communities, with only 23% of all PCS licenses in commercial operation. Many communities still do not yet have a choice of mobile carrier other than the two cellular operators.

Leap agrees wholeheartedly with the authors of H.R. 4758 that the wireless industry is experiencing strong growth and competitive development, with many communities having a choice of five or more wireless services. However, it is because of the spectrum cap—not despite it—that Americans now have far greater choices in mobile providers. Because the spectrum cap prevents the concentration of spectrum in to a few hands, the government is able to let market forces work rather than imposing strict behavioral regulation over pricing and operations.

The spectrum cap also sends the proper efficiency signals to carriers as it promotes the efficient use of existing spectrum and the modernization of networks. Some of the most vociferous proponents of eliminating the cap are the same carriers unwilling to transition to digital networks. While the new PCS industry is 100 percent digital, cellular carriers are still primarily using legacy analog networks: Bell Atlantic 49% digital; SBC 41% digital; AirTouch 39% digital; GTE 26% digital (Source: Merrill Lynch, The Matrix—1Q 00, June 20 2000)

H.R. 4758 suggests that the spectrum cap can be replaced with antitrust enforcement. Leap believes that the cap is the least intrusive means of preserving a diversity of operators and consumer choice. Antitrust litigation is costly, time-consuming and detracts from an entrepreneur's focus on rolling out new services. Mr. Chairman, Leap loves its lawyers, it just does not want to pay more of them to contest the market concentration that is sure to come if H.R. 4758 is adopted.

The bill also threatens the completion of Congress' express goal of putting licenses in the hands of designated entities, namely, rural phone companies, small businesses, and business owned by women and minority groups. With the advent of auctions, Congress recognized that these companies would not be able to compete head-to-head in auctions with the largest wireless carriers. It directed the FCC to ensure that its auction procedures give designated entities a meaningful opportunity to participate in auctions and enter the wireless marketplace. For PCS, the Commission originally implemented this guidance by reserving 40 MHz of the 120 MHz for designated entities (the C and F block spectrum bands). Despite a few well-publicized bankruptcies, this program has been extremely effective in putting spectrum in the hands of entrepreneurs and small carriers like Leap. The C and F block companies are rolling out services in rural markets and major metropolitan areas and offering innovative service alternatives like Around-Town Phone Service to replace traditional landline service.

This bill before you today allows the nation's largest carriers to participate in the very auctions now reserved for designated entities—unquestionably the last auction in which designated entities will have a meaningful opportunity to purchase reserved PCS spectrum. Despite the unquestioned success of this entrepreneurs' program, the FCC is now considering a proposal that would take back as much as 20 MHz of the 30 MHz reserved for designated entities. The mega-carriers claim that

this spectrum will relieve congestion and is the only available alternative for them to offer advanced 3G services. This contention is simply untrue. The FCC will be conducting a 700 MHz auction in September and is slated to re-allocate additional spectrum for mobile services in the next year or so. In addition, carriers always have the option of entering the secondary market for spectrum through assignments and transfers, affiliation agreements, swaps, mergers, and disaggregation and partitioning arrangements.

As the FCC has repeatedly recognized until now, it is simply not plausible for designated entities to compete in open auctions against the nation's largest companies who are targeting specific markets. Under the current rules, designated entities bid against each other. Under the FCC proposal, designated entities would be forced to bid against companies, like SBC, that are almost 400 times as large as the largest designated entity. H.R. 4758 would remove the last impediment for these mega-carriers to obtain the very spectrum meant to promote the creation of new competitors and new business opportunities for entrepreneurs.

Leap urges this committee to move cautiously in eliminating a program that is the catalyst of mobile wireless competition. The FCC is scheduled to review the continued need for the spectrum cap later this year as part of its Congressionally-mandated biannual review. Moreover, a straightforward waiver process is in place and the Commission has raised the cap to 55 MHz for rural markets.

The adoption of H.R. 4758 will reduce the number of potential competitors in the wireless marketplace by eliminating the possibility of any meaningful designated entity participation in the upcoming C and F block re-auction, ultimately harming the American consumer. This committee should reject a proposal that so narrowly targets Congress' goals of avoiding an excessive concentration of licenses and disseminating licenses among a wide variety of applicants, including small business, rural telephone companies, and members of minority groups and women.

Mr. TAUZIN. Thank you, Mr. Kelley.

The committee wants to recognize the presence of Mr. Brian Bilbray, who is not a member of the subcommittee but is a member of the full Commerce Committee. I want to welcome you, Brian, to these hearings.

Mr. BILBRAY. Thank you, Mr. Chairman.

Mr. TAUZIN. We only have about five or so minutes before we are all going to have to run. We have a 15-minute vote on the floor. I have asked Mr. Stearns to proceed over there and then to come back. So as soon as he gets back, he will be back before I will be back and he will reconvene the hearing.

But let me recognize myself and see if we can get another member in before we have to go. I have just a couple of quick questions.

First of all, my understanding is that digital can accommodate as much as 20 times the number of conversation as analog can accommodate on the spectrum. According to the reports we have seen, various phone companies have different percentages of digital in their mix. For example, Verizon is at 49 percent. I think SBC is at 41 percent.

Obviously, increasing the percentage of digital in the wireless mix would increase dramatically the efficient use of the spectrum. Mr. Smith, maybe you could respond to that. Mr. Strigl, you could tell us something. You, too, Mr. Kelley. Is that so and what is being done about that?

Mr. SMITH. Well, Mr. Hatfield, I think, made a statement that I would even say was very understated when he said that is an aggressive number, the 20 to 25 times number. I think that the more operative number is around six times the digital capacity over analog.

With regards to the mix of analog and digital, there is no question that digital services are more efficient in the spectrum.

But I would like to remind you that to the degree to which a mix is between analog and digital is to a large extent determined by the customers themselves who have analog phones versus digital phones.

Mr. TAUZIN. But obviously a company can aggressively pursue the sale of its digital products.

Mr. SMITH. That is exactly correct.

Mr. TAUZIN. I suspect that should be in company plans; right?

Mr. SMITH. It is in our company plans. One thing I will point out that was not mentioned this morning, Mr. Dingell accurately, I think, pointed out that the FCC requires us to provide a base of analog service everywhere and one of the reasons that that is still the case is that there are multiple digital technologies across the country, GSMT, and so the analog service becomes a common denominator for roaming.

So we will probably always have a degree of analog capacity.

Mr. TAUZIN. Do you want to comment on that, Mr. Strigl?

Mr. STRIGL. Mr. Chairman, I think the better way of measuring digital penetration is to look at the usage that comes from digital customers. While we have 49 percent of our base that is digital, we are moving very rapidly more and more to digital, but that 49 of our base accounts for approximately 80 percent of our busy hour usage.

So we have moved very rapidly. I think that the analog customer base that exists today is more what we could categorize as the "glove box" customer. They use the phone very little and primarily for emergency reasons.

Mr. TAUZIN. Mr. Kelley, do you want to respond?

Mr. KELLEY. Yes. If I could just comment on that. What he is saying is absolutely accurate if you have 50 percent or more of your spectrum that is devoted to analog. It is true, that is really not being used very much, even by the customers that you have to reserve that spectrum for.

You can't dynamically allocate more spectrum to digital just when you need it.

Mr. TAUZIN. I want to give you each a chance, if you will, and this is the only other question I have for you, to respond to anything you heard in the first panel that you really want to disagree with, wholeheartedly, aggressively, passionately. Here is your chance, anyone of you. Mr. Strigl.

Mr. STRIGL. I would be pleased to respond to some of the comments that I heard this morning about this very issue that we are talking about. It is interesting and I think it works in a laboratory to try to plan how to more efficiently engineer a digital network.

But the fact of the matter is, if you look at what is done in cities like New York City today or Los Angeles today, you can look at virtually every other building top and see an antenna.

So I think what Mr. Hatfield suggested this morning in terms of better engineering techniques perhaps works in some of the smaller markets, but we are at a limitation in the larger markets today that makes building out, obtaining more cellular tower sites very, very difficult.

Mr. TAUZIN. So you are back to needing more spectrum? Anyone else? Mr. Smith.

Mr. SMITH. I would start out by concurring with Mr. Strigl's remarks and say that with regard to the issue of spectrum caps, again, the spectrum caps were very effective in doing what they were intended to do, and the graphs show that. But to compare spectrum caps in 1994 to spectrum caps in 2000 is an unfair comparison.

We are here in 2000 looking at three major trends in wireless usage. No. 1, increased minutes of use because of the pervasive nature of wireless, increased penetration, more customers than every coming on board, and the advent of new wireless digital data services. All of these things will, for all the reasons mentioned, increase the demand.

Mr. TAUZIN. It is a different marketplace.

Mr. SMITH. It is just a different marketplace.

Mr. TAUZIN. As they say in Istanbul, you can't go back to Constantinople.

Mr. SMITH. That's right.

Mr. TAUZIN. Mr. Kelley.

Mr. KELLEY. Yes. Just to reiterate, where we have rolled out service, it is not a laboratory. These are real users using 1,000 minutes a month of phone service, some of them up to 15,000. It is an unlimited service. We are able to do this by making 100 percent use of the latest digital technology.

Mr. TAUZIN. I am not allowed to vote wireless, otherwise, I would. I have to go in person.

The committee will stand in recess for about five or 10 minutes until Mr. Stearns can reconvene the hearing.

[Brief recess.]

Mr. STEARNS [presiding]. The Subcommittee on Telecommunications will reconvene. The Chairman will be back momentarily and I think members will. Just to expedite, the second panel has been very patient to wait while we had a second round of questions with the first panel.

So let me start off the questioning.

Mr. Kelley, I guess you were here earlier when we showed the graphs of what the other countries, where they have a lot more than the 46 MHz and many countries don't even have any limits.

You seem to think if we don't do anything that technology will take care of it. That is what you imply. I heard the end of your testimony. Isn't it true that if the spectrum cap is lifted for future auctions it would increase the value of the spectrum because more people would bid on it? Do you think that is true?

Mr. KELLEY. I am the CTO of Leap Wireless. I will give you my best estimate. I really wouldn't want to tread in the area of the value of it. That is really not the message I was here with today.

Referring back to the charts that you showed, I did see them. Referring to some of the comments that were made earlier, there is this fixed pie of spectrum in the world. That is all that there is. It is between 300, 400 or 500 MHz and around 3,000 MHz. That is all there is.

You can consolidate that into a few groups or you can allow more competitors into the market in the same pie by using smaller slices and in doing so you enable companies such as ourselves at Leap

Wireless to offer what is the lowest wireless phone service, mobile service, anywhere on the planet ahead of Europe and Asia.

Mr. STEARNS. Mr. Baca, do you agree?

Mr. BACA. I agree that the value of the spectrum is dependent upon the number of rules determining who can bid and who can't bid. I think what is important here is to look at what is the effect on competition.

The spectrum cap served a very useful purpose when the U.S. was transitioning from a duopoly environment into a competitive environment, particularly because the FCC was using a new licensing methodology. So we are moving in a very different way than we had done before in communications provision.

Other countries have used that experience that the U.S. has had and see that they no longer need something like a spectrum cap because there are other means by which they can achieve those same goals. There are other law enforcement type means where they can prevent undue concentration.

So I am saying that the spectrum cap served a purpose but it is no longer needed now and in fact is thwarting the competitive ability of U.S. providers.

Mr. STEARNS. Mr. Smith, do your companies own or operate any commercial licenses outside the United States and if so, based upon what you have seen on spectrum caps, if any, imposed on your licenses outside the United States, you might compare and give us some comments on that.

Mr. SMITH. We do own licenses in Europe and in Mexico and in several other parts of the world. I am not that familiar with all of the spectrum rules outside of the U.S., but I can tell you what we have experienced is a rapid growth of subscribership based upon our freedom and our ability to build networks within the constraints of what the local laws are and which have allowed us a degree of pricing flexibility which has allowed our customer base to continue to grow.

Mr. STEARNS. In those licenses that are outside the United States, have you been able to provide additional services to these folks that you can't provide those same services here in the United States?

Mr. SMITH. Well, not yet. I think we have not reached an impediment at that point, but clearly we are kind of at the cusp of the introduction of some new services and our concern is that as we move forward into the next several years and as we do spectrum planning for the next several years that there are no artificial boundaries and no artificial barriers here, particularly in the U.S. to be able to offer whatever services our customers might want.

Mr. STEARNS. Are you bumping up against the cap now?

Mr. SMITH. We are not necessarily bumping up against the cap. We are clearly bumping up against capacity limits in the spectrum allocations that we have in some major markets.

We happen to serve a number of major markets in the U.S., very large cities, Los Angeles, Chicago, Boston, Washington, D. C., and so forth. In many of these cities we are virtually at the limits of our current technology.

Mr. STEARNS. Limits of current technology?

Mr. SMITH. We would allow that there are going to be some technological improvements in the future, and we are going to take advantage of those, but we are at a point where additional spectrum is going to be needed in a very short period of time.

Mr. STEARNS. Mr. Strigl, based upon some of these questions I have asked Mr. Smith, is there anything you would like to comment on?

Mr. STRIGL. First of all, my company, Verizon Wireless does not own licenses outside the United States. However, our two owners, Verizon Communications and Vodaphone Air Touch own numerous licenses outside of the United States.

I guess I would just offer that some of the commentary that I heard this morning suggesting that there was not a significant amount of competition in international markets I think is just plain wrong.

If I look at the United Kingdom, Italy, or Germany, they are very competition markets. So I would just correct that perception if I might.

Mr. STEARNS. My time has expired.

The gentleman, Mr. Green from Texas, is recognized for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman. I apologize for all of us running and being gone. That is kind of the nature of the system here.

Mr. Smith, I note in your testimony the rapid expanding FCC spectrum auction of the 700 MHz bandwidth is causing great concern within your industry. If the issue of clearing is not resolved by the September 1 auction date, how do you think this will affect the bidding on the spectrum?

Mr. SMITH. Well, I know that there is a large degree of concern in the industry and the FCC and their Policy Memorandum, Opinion and Order on the spectrum clearing issue has taken a fairly passive position favoring instead private negotiations between what they call license holders and broadcasters that occupy the spectrum today.

The concern that we have is that in order to be a license holder you have to bid on the spectrum and you have to win the spectrum.

Yet, as a company that is concerned about the evaluation of our business, we need to know how much it is going to cost to clear that spectrum before we can begin to build business plans and before we can establish a willingness to pay in the auction.

So the discussions have to take place with the broadcasters before the auction begins, not after the auction begins.

So that would cause us a degree of concern. I can't speak for everybody but it is causing us a degree of concern and at least it will impact the degree to which we are aggressive bidders in the auction.

Mr. GREEN. Would that affect the amount of money that the auction may raise? It seems logical.

Mr. SMITH. Logically, it would. If there was a more aggressive bidding across the board you would expect the prices to rise. Certainly if this were unencumbered spectrum I would expect the values to be much higher than they would be if it was encumbered spectrum.

Mr. GREEN. How long do you thing the 700 MHz auction should be delayed to better bring the spectrum to the consumers?

Mr. SMITH. Well, as a practical matter, there are a number of issues that have to be resolved. Any delay at all is probably going to be for several months. That would place it on top of the scheduled time for the C- and F-block in November.

Our recommendation is that it is delayed on into 2001 and maybe as late as July 2001.

Mr. GREEN. Thank you. Mr. Strigl, Verizon Wireless, I guess I should keep up with the market better, do you also have GTE Wireless?

Mr. STRIGL. Congressman Green, the merged company of GTE Wireless, Vodaphone, Air Touch, PrimeCo and Bell Atlantic Mobile.

Mr. GREEN. Okay. Because I know the beauty of the spectrum in Houston, for example, GTE Wireless is one of them along with Houston Cellular. Because of the spectrum expansion now we have 4 or 5 companies and the competition has worked to the benefit of the consumer. More people, obviously, are having cellular phones.

In your testimony you spoke of Verizon's interest in bidding on the spectrum recaptured from the NextWave bankruptcy proceedings.

Are you concerned that this C- and F-block spectrum could be flawed if all the legal entanglements are not resolved or to simply the question, would you urge the FCC to postpone this auction if all the legal issues surrounding the recaptured are not fully resolved before the auction?

I guess what I am wondering, who would bid on an auction where they may end up spending a great deal of time in court?

Mr. STRIGL. I think, sir, that both auctions at current course and speed are flawed. Would we bid? We have already said that we were very interested in bidding on 700 MHz. I think that what happens is the values are significantly depressed.

I am terribly concerned about clearing it. On the 700 MHz auctions, I have the particular problem of having to go to my board, justify how much money I would put down on this auction and then turning around again and saying, "Here is how much money I need to clear the spectrum."

With the reauction of the 1900 MHz, perhaps this, too, should be delayed somewhat until the legal entanglements have worked their way through. But in both cases I can't forego at least studying and figuring out how I can bid on this and use it in either case.

Mr. GREEN. So again, on both auctions, I guess you would be interested in seeing some of the issues resolved hopefully by the middle of next year?

Mr. STRIGL. Yes, sir. Yes. Certainly on 700 MHz because it is not usable until at best 2006. There is plenty of time for that. So I would concur with my colleague, Mr. Smith, that mid next year is probably thoughtful.

Mr. GREEN. Mr. Chairman, I know my time is out. But I see Mr. Smith may have an additional comment.

Mr. SMITH. If I could just follow up on your question, Congressman Green, one way to look at this with regard to the 700 MHz spectrum is that by the policy that has been established by the FCC where the potential licensee will have to negotiate with the

broadcasters, the value of the spectrum, to address your point, is actually being transferred from the public interest, from the government and the public, extracting that value for themselves to the broadcasters.

I think Congressman Boucher this morning talked about some of the discussions that he had been privy to where that could actually occur.

So the more that this is delayed the more we have an opportunity to reach some sound judgments with regards to what the value of this spectrum is actually worth, to maximize its value for the government.

Mr. GREEN. Thank you, Mr. Chairman.

Mr. TAUZIN. Thank you, Mr. Green. Before we finish with the panel, I would like to ask any of you, if you can help us understand this, what are the elements that have allowed our Asian and European friends to move more quickly on 3-G than we have in this country?

What elements are there that are missing here?

Mr. Baca?

Mr. BACA. If I could do that, Mr. Chairman, what I did was recently look at that very issue for investors. My big conclusion was that spectrum management outside of the United States is a much more simplified process. It is done in one group generally. There is one entity within the government that can do that.

There is also a greater availability of potentially usable spectrum. In the industry, the spectrum is so cut up into the various government and non-government users that it is very, very difficult to get contiguous spectrum.

We saw that in the U.S. proposal for the recent WRC in Istanbul. It was spun. There were slices of spectrum all over the spectrum map and it was spun as more flexible and more innovative and allowing all sort of, you know, benefits, but it was just spin.

Basically, what it said was the U.S. doesn't have the spectrum so that we are not like the U.K. which says, we don't have to wait for the ITU to move and allocate new spectrum. We have contiguous spectrum available, so we can schedule an auction. We can be first off the block. We can raise $35 billion.

It is simply that the U.S. needs to be more focused and efficient in managing the spectrum because it has less spectrum available and tremendous demands on it. So the U.S. can't afford the luxury——

Mr. TAUZIN. Is that all it is? Are there any other elements, any other problems we face that they don't face that are handicaps to the deployment of 3-G in this country?

Mr. KELLEY. If I could just respond to that and actually just comment on the perception that somehow the U.S. is as far behind Europe and Asia in this.

3-G means different things to different people. To some people it means more spectrum. To others it means a new technology.

But what it means to most people who would like to see wireless data, high speed wireless data, but to consumers much the way you can see Docomo's I-mode service in Japan, which incidentally is done at 9.6 kilobytes a second, not any blazing speed at all.

What it really means is being able to offer a higher speed data service. That is something that will be possible to do next year. That is really the point I would like to make.

If we have the opportunity ourselves to have another ten MHz of spectrum in the markets where we only have ten today, then with 20 MHz a spectrum we would be able to provide not only our unlimited voice service, but high speed wireless data services as well, which would really accomplish the end game which is to bring high speed wireless data to American consumers.

Mr. TAUZIN. Are there any other comments? Mr. Strigl?

Mr. STRIGL. Mr. Chairman, I really can't add much to that except to say that I, too, believe that what is touted as greater success in Europe is not necessarily so. Remember that first there is greater penetration in Europe.

That is driven in part by the fact that there is less land line penetration and we do see substitution over their very early time.

Mr. TAUZIN. In short, they have a weaker wired system as we and they have had to rely upon wireless a lot more than we have.

Mr. STRIGL. In many countries, sir, that is correct. They have done some things in terms of advance services that we haven't done as quickly, like two-way SMS but you will see that roll out very quickly here.

Mr. TAUZIN. Mr. Baca, if I can summarize again, your conclusion after studying this is that it is simply a problem of management and availability of contiguous enough spectrum for indeed these advanced services to roll out?

Mr. BACA. It is certainly not a matter of the competition spirit of U.S. providers or certainly their technological ability. It has to be other impediments that are causing them to become competitively disadvantaged domestically versus outside of the United States.

It is the ability to know that you are going to have access on a timely basis to the spectrum that you say that you need.

Mr. TAUZIN. Thank you. Mr. Stearns, do you have anything you would like to follow up on?

Mr. STEARNS. No, Mr. Chairman. I think you hit upon it basically. If you were sitting in our place, I might just go down the line here, what do you think this committee could do to make sure that we are competitive in 3-G and that we would have superior competitiveness with the Europeans.

May I start with you, Mr. Smith?

Mr. SMITH. Sure. One of the concerns we had in spectrum allocation policy is that the FCC has demonstrated a practice of incrementally developing spectrum allocation. In other words, we are going to auction this off this year. There is no long-term plan.

As we look at the world allocation, international allocation of tables and look at what has been done at WRC 2000 and so forth, I think the FCC needs to step back, and with the NTIA, because some of the spectrum is government-controlled, and say, what is the long-term plan here? Here is where we are. Here is where we want to be. Then develop cooperatively between the Congress, between the FCC and the NTIA a plan.

Mr. TAUZIN. Would my friend yield?

Mr. STEARNS. Sure.

Mr. TAUZIN. It may be useful, I mean you can comment on this if you like, it may be useful for us to consider next year the adoption of a legislative policy position to guide such a long-term plan. I mean part of the stop and go decisions that are being made is not just the fault of the agencies.

Much of it is the fault of the Congress who for years have been looking at spectrum as a piggybank, as a cash cow, and making decisions, as many of us pointed out, that are related to the budget, not necessarily to good spectrum policy.

Perhaps we might want to explore that, Cliff, in terms of defining for the administration what a long term policy should look like and therefore giving the Budget Committee a few more barriers to leap before it begins dictating spectrum policy on the basis of financial requirements. That may be our responsibility as well.

Did you have anything else, Cliff?

Mr. STEARNS. I was just going to ask the rest of them if they agree.

Mr. STRIGL. Yes, sir, I do agree with what Mr. Smith has said in terms of the long term plan. I would add, however, just a caution. That is that we are behind in having a long term plan so I would prefer not planning the plan for a long time.

Mr. BACA. I think that the Congress could be very effective by urging all of the participants, and that is part of the problem, that in the U.S. there are many more participants. There is NTIA and all the 43 Defense agencies and the FCC and there is the Department of State and there is USTR.

Urge all of them, make this a No. 1 priority, to make sure that they demonstrate that they can implement the decisions that were made internationally WRC domestically and show how this will form the basis for a new spectrum management plan.

The one big piece of advice is the advice that I give my students when I teach international communications at Georgetown. My parting advice to them is: When you go back to your foreign countries, remember, auctions and anti-trust are not spectrum management. That is law enforcement.

Mr. STEARNS. Mr. Kelley.

Mr. KELLEY. Yes, thanks.

To continue with the competitive forces that we have in this country that have created the technologies that we have now is the most prudent action I think we could take, by continuing to allow the set aside program, as it was constructed, to continue and by keeping the spectrum caps in place you allow companies like ourselves to exist and will allow other new wireless companies to roll out new services as well.

Mr. TAUZIN. Thank you, Cliff. Thank you all.

The record, by our rules, will stay open for 30 days. So if you have additional suggestions or comments, I would encourage you, by the way, to examine the testimony in the next few days that you heard on the first panel. If you want to make additional comments regarding that testimony, I would deeply appreciate that.

I like the interaction of panels. Because we separated you, we didn't get that. So if you would kindly do that for me in the next 30 days, the record will stay open.

My deep thanks for your patience today. The hearing stands adjourned.

[Whereupon, at 3 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF MATTHEW J. FLANIGAN, PRESIDENT, TELECOMMUNICATIONS INDUSTRY ASSOCIATION

Mr. Chairman and Ranking Member, thank you for this opportunity to testify before the Subcommittee on a matter of great importance to the telecommunications industry. I am Matthew J. Flanigan, President of the Telecommunications Industry Association (TIA).

TIA is a full-service national trade organization with membership of 1,000 large and small companies that provide communications and information technology products, materials, systems, distribution services and professional services in the United States and around the world. The association's member companies manufacture or supply virtually all of the products used in global communications networks. TIA seeks to provide its members a forum for the examination of industry issues and information and serves as their voice on public policy and international issues. Accredited by the American National Standards Institute (ANSI), TIA also is a major contributor of voluntary industry standards that promote trade and commerce in telecommunications products—domestically and around the world—including standards for many of the products that use the wireless spectrum. Since January 1999, TIA has been the secretariat for the

Third-Generation Partnership Project 2 (3GPP2), which was created to support International Mobile Telecommunications (IMT)-2000, the International Telecommunication Union (ITU)-led initiative to develop global third-generation wireless standards. To that end, TIA's contributions to IMT-2000 help form the backbone of the ITU's radio interface recommendation.

Mr. Chairman, TIA strongly supports and greatly appreciates the attention you are giving today to this nation's pressing need for more radio spectrum for the advanced wireless telecommunications services known as third-generation or "3G" services. Last month, on June 2nd in Istanbul, Turkey, the ITU completed the World Radiocommunication Conference 2000 (WRC-2000), a global meeting of national administrations that identified several possible additional radio frequency bands for the provision of IMT-2000. IMT-2000 is the ITU's terminology for the wireless 3G systems capable of broadband and multimedia applications, including voice, video, and data.

The successful conclusion of WRC-2000 presents a unique opportunity to move without delay to begin the process of making third-generation spectrum available in the United States. For the sake of U.S. consumers, manufacturers and service providers, it is extremely critical to keep pace with world market demand and to harmonize U.S. bands for 3G services with the spectrum being designated in the rest of the world. How do we move toward achieving alignment with the rest of the world for 3G services? The answer begins with sound spectrum management and a focused, cooperative effort between the Federal Communications Commission (FCC) and the Executive Branch.

PRINCIPLES OF SOUND SPECTRUM MANAGEMENT

As manufacturers of wireless products and systems, TIA members have a direct interest in our nation's spectrum management polices. Responsible spectrum management contributes to high volume manufacturing that increases opportunities for competition in both the equipment and service markets and also ensures that consumers and users can purchase equipment using the best technology at the lowest price. Geographically unified national allocations, for example, reduce equipment cost through economies of scale. Harmonized domestic and international spectrum allocations increase exports and jobs generated by this industry.

Radio spectrum is a unique, ubiquitous natural resource. Unlike many other natural resources, it can be repeatedly reused. However, it is a resource that can only accommodate a limited number of simultaneous users at one time. This limitation requires careful planning and management in order to maximize its value for public and private services. This is particularly true because the demand for communications spectrum is rapidly increasing. Both the competition in wireless markets and the continuing development of new radio technologies are increasing the demand for access to the same limited spectrum. While this increased demand is placing pressure on regulators to make difficult choices among competing potential spectrum

users, it is also stimulating technological advances in spectrum sharing techniques and creating the opportunity to realize economies of scale.

The shared goal of global, mobile, seamless, "anytime, anywhere" communications was the motivation for the high degree of consensus achieved at the recent WRC-2000. The national administrations represented there recognized the need to achieve a global harmonized spectrum plan so as to maximize economies of scale, lower costs, and secure an early implementation of the third-generation services. The outcome of this conference represents sound spectrum management at the international level. The U.S. must now move promptly to make its own spectrum management decisions at the national level in light of the global framework adopted at WRC-2000, and make available on an expeditious basis the spectrum needed for 3G services.

While sound spectrum management is not easy to accomplish, it is a challenge that can be met through strategic planning and recognition of the fundamental principles that lead to optimal spectrum usage. It is TIA's position that increased reliance on market forces, rather than government oversight, will lead to the most economically efficient use of spectrum, the development of the most innovative technologies, and the universal deployment of wireless services. This does not, however, mean that the government can take a hands-off approach to how spectrum is allocated. This is a function that remains uniquely the government's and it should be given a high priority.

In a competitive market, companies will develop and produce those technologies and services that are most desired by consumers. And they will offer these services at competitive prices. If spectrum can be used for those services that are most in demand, then companies will have a greater profit motive for entering the wireless market. In this way, market forces will encourage an efficient, innovative, and flexible use of the spectrum and will serve as the best arbiter among competing technologies and the services that they provide.

However, a management framework that relies on market forces does not preclude the government from playing a significant role within that framework. As I noted, spectrum management is an essential task that the regulator must undertake. This includes determining how best to apportion spectrum among competing services, both licensed and unlicensed, making spectrum available for essential public safety services and national defense, and protecting users from harmful interference.

Traditionally, governments have allocated available frequency bands for specific uses before granting licenses to use the frequencies. Regulators should establish the initial geographic scope and bandwidth of licenses, taking into account the various characteristics of different frequencies, electromagnetic compatibility and the different spectrum needs of broad categories of service. This approach still allows for technological developments that might make the most effective and efficient use of the bandwidth provided, as well as permitting the introduction of new services that are compatible with the intended use of the spectrum.

Ultimately, spectrum allocation decisions must reflect a government and private sector consensus as to what services are technologically possible, commercially viable, spectrally efficient and likely to benefit the public. Allocating spectrum without an understanding of domestic and global marketplace and technical demands can lead to fractured markets, increased equipment costs, delayed research and product development, and increased time-to-market. This is particularly true where the failure to achieve harmonization with global allocation plans will put a nation at a competitive disadvantage that will continue throughout the life of the service. Many argue this is precisely the case with 3G services in the U.S.

It is also self-evident that the substantial benefits to the U.S. economy arising from a well-crafted spectrum allocation process, as described above, will be lost if spectrum allocation decisions are driven primarily by the demands of federal budget planning. Although spectrum auctions may be an effective license assignment tool for certain services, spectrum auctions should not be a substitute for sound spectrum allocation decisions or used primarily as a means of revenue generation. In addition, as noted, responsible spectrum stewardship requires that consideration be given to services that do not generate commercial revenues, for example, public safety systems.

Just as worldwide telephony standards have enabled telecommunications systems to cross borders and become globally accessible, harmonized spectrum coordination around the world can enable more effective, economical and competitive wireless communications. This provides the consumer with global communications mobility as well as global access. Given the unprecedented potential growth in advanced mobile and personal communications, and the convergence of telecommunications and information technologies, it is imperative that the U.S. rises to the difficult chal-

lenge of ensuring sound spectrum planning and management for third-generation wireless services,

3G SPECTRUM ALLOCATION PRIORITY

As I have noted, the ITU recently completed its WRC-2000 meeting and the outcome was very successful for the future of third-generation wireless services. The conference recognized that approximately 160 MHz of additional spectrum would be needed to meet the projected demand for 3G services in the next decade. It identified both the 1710-1885 MHz and 2500-2690 MHz bands as potential bands for the service, with no preference given to either band. It indicated strong support for market-driven policies, including those that allow operators to evolve their first- and second-generation mobile systems to 3G and provide operators with flexibility in choosing technologies. It is now time for the U.S. to move forward expeditiously to develop a national spectrum plan for 3G.

The bands identified by the WRC-2000 are currently being used in the U.S. The 1710-1850 band has been used by the federal government. Part of this spectrum, the 1710-1755 MHz band, already has been reallocated for commercial wireless services, and is likely to be available for 3G. The 1755-1850 MHz band is heavily used today by many federal agencies, and the National Telecommunications and Information Administration (NTIA) has indicated that it will study the band to determine whether, and under what timeframe, portions of the band can be made available for IMT-2000.

The 2500-2690 MHz band also is being used today for commercial fixed services, *i.e.* the Multichannel Multipoint Distribution Service (MMDS) and the Instructional Television Fixed Service (ITFS). This spectrum originally was used for "wireless cable" systems, but recent rule changes now permit it to be used for wireless Internet access and other fixed services.

It is imperative that the FCC and NTIA work with industry to determine what portions of the bands identified at WRC-2000 can be made available for IMT2000 in a timeframe that meets market demand. Studies must be completed to determine, for example, whether 3G services can share spectrum with existing services in these bands, whether relocation of existing services is feasible, and the cost and timing of such relocations. The wireless industry has asked the FCC to commence a rulemaking proceeding to begin this process and to work with NTIA to complete these studies as soon as possible.

The ability of consumers to benefit from emerging wireless services depends on prompt action by the federal government. The U.S. economy also needs to evolve to advanced wireless services in order to continue its information technology driven expansion. Wireless technologies and services are becoming essential to many e-commerce applications and industry is planning a variety of future information services that can be provided wirelessly. Consumers in the United States and abroad are beginning to rely on mobile, hand-held devices and services to deliver the Internet anywhere, any time.

As the federal government proceeds to study the bands for 3G uses, it must also avoid taking actions that could preempt their use and prevent the U.S. from adopting a 3G spectrum plan that is harmonized with the rest of the world. For example, the FCC, in its Spectrum Policy Statement released in November 1999, proposes to make available 1710-1755 MHz paired with 2110-2150 MHz and 2160-2165 MHz for fixed and mobile wireless services which could include 3G technology and services. This proposal is inconsistent with the harmonized approach that the WRC-2000 framework seeks to promote and should be put on hold until the studies of the proposed bands are completed. Although the FCC is permitted, under the Balanced Budget Act of 1997, to auction 1710-1755 MHz at any time after January 1, 2001, and is presently obligated to license 2110-2150 MHz by September 30, 2002, to proceed in auctioning these bands prior to completing the spectrum studies on the bands identified at WRC-2000 would put the U.S. irrevocably out of step with the rest of the world. This threatens to harm the U.S. wireless industry and the American public by depriving them of the global economies of scale that harmonized spectrum allocations would bring. I call upon Congress to address this matter by directing the FCC to refrain from auctioning any part of the 1710-1755 MHz or 2110-2150 MHz bands prior to the completion of these studies and a decision on whether this spectrum is appropriate for 3G services in the U.S.

CONCLUSION

In conclusion, Mr. Chairman, I would urge the Subcommittee to provide both support and direction to the FCC and NTIA in order to facilitate completion of the studies needed to allocate 3G spectrum in the U.S. Prompt action by these agencies is

essential to ensure that 3G spectrum allocation decisions are made on the basis of informed consideration of all alternatives. This will allow U.S. consumers and industry to avoid the costs of precipitous action, as well as those arising from undue delay, including lost economic growth and jobs, unreasonable delays in introducing new services for the American public, and further erosion of U.S. leadership in the wireless technology area.

The Subcommittee should establish a regular reporting structure to assure that it is informed about how the studies are proceeding. The Subcommittee should also encourage the FCC and NTIA to establish ambitious goals for the completion of the work. Both agencies should be strongly encouraged to keep the private sector involved by working closely with industry and trade associations such as TIA to complete the necessary studies and by developing a plan for obtaining spectrum for 3G services. Finally, the Subcommittee should take steps to assure that the auction of 1710-1755 MHz and 2110-2150 MHz does not occur before the completion of these spectrum studies by NTIA and the FCC.

Thank you again for allowing TIA to present its members' views.

Howard Woolley
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August 25, 2000

The Honorable W. J. (Billy) Tauzin
Chairman
Subcommittee on Telecommunications Trade & Consumer Protection
Committee on Commerce
United States House of Representatives
2183 Rayburn House Office Building
Washington, DC 20515-1803

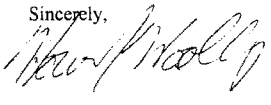
Re: Spectrum Hearing of July 19, 2000

Dear Mr. Chairman:

On July 19, 2000, the Telecommunications Subcommittee held a hearing to conduct "A Review of the FCC's Spectrum Policies for the 21st Century and H.R. 4758, the Spectrum Resource Assurance Act". Dennis F. Strigl, President and CEO of Verizon Wireless, testified at that hearing about the urgent need to allocate additional spectrum for Third Generation (3G) wireless services and the importance of eliminating regulations that restrict access to spectrum. Among these regulations is the FCC's "spectrum cap", which limits the amount of commercial mobile radio (such as cellular and PCS) spectrum that a single company can control.

Attached is additional information that will help to supplement Mr. Strigl's oral and written testimony. I would appreciate it if this information could be placed in the record of the above referenced hearing and associated with Mr. Strigl's testimony. Verizon Wireless appreciates your strong leadership in advancing issues that are important to Verizon and the rest of the wireless industry. We look forward to working with you, your staff, and the rest of the Subcommittee on important spectrum matters in the future.

Sincerely,



SUPPLEMENTAL INFORMATION
PROVIDED IN CONJUNCTION WITH

TESTIMONY[1]
OF
DENNIS F. STRIGL
PRESIDENT AND CHIEF EXECUTIVE OFFICER
VERIZON WIRELESS[2]
BEFORE THE
SUBCOMMITTEE ON TELECOMMUNICATIONS
COMMITTEE ON COMMERCE
UNITED STATES HOUSE OF REPRESENTATIVES

August 23, 2000

The following is offered as additional information in support of making more spectrum available for commercial mobile radio service (CMRS) operators, and eliminating any regulatory impediments to acquiring more spectrum – i.e., the CMRS Spectrum Cap.

1. **Verizon Wireless is aggressively deploying state-of-the-art digital technology.**

   Verizon Wireless employs Code Division Multiple Access (CDMA) digital technology throughout its network. CDMA is the most spectrally efficient digital radio technology currently available, and that is one of the primary reasons that it was selected it as Verizon's technology of choice. Importantly, most of the technologies that are being adopted for Third Generation (3G) wireless networks are based on CDMA technology.

   Verizon Wireless is at the forefront of the industry in establishing a complete digital network footprint. Bell Atlantic Mobile (BAM), for example, has spent billions of dollars on deploying digital technology over the past several years. During the first quarter of 2000, 94% of the population of the cellular properties served by BAM were covered by digital service. During the same time period, 98% of the New York City metropolitan population and 96% of the Washington, D.C./Baltimore metropolitan population were covered by digital service.

[1] Mr. Strigl testified before the Telecommunications Subcommittee on July 19, 2000.

[2] Verizon Wireless is a joint venture between Verizon Communications, which was recently formed by the merger of Bell Atlantic and GTE, and Vodafone AirTouch. The joint venture controls wireless properties that cover more than 90% of the U.S. population and were previously run by Bell Atlantic Mobile, GTE Mobile, AirTouch, PCS PrimeCo, and Ameritech Cellular.

2. **Verizon Wireless will deploy emerging technologies as appropriate to make the most efficient use of its network and best serve its customers.**

   New digital technologies, such as CDMA-based 1XRTT, are being developed that will provide further improvements in spectral efficiency and also enable the introduction of new high-speed packet data services. Theoretically, 1XRTT will double the available spectral capacity as compared to current CDMA systems. However, this improvement can only be realized if there is a proliferation of 1XRTT mobile units in use. In reality, we expect modest improvements in efficiency relative to current generation CDMA over the next few years.

   The real advantage of 1XRTT is its ability to support high-speed data services. Today, we offer digital services that support data rates up to 14.4 kbps. 1XRTT will support data rates up to 144 kbps – 10 times the data rates available today. While 1XRTT will facilitate the introduction of high-speed data services, it will also require additional spectrum to support such services. Even with the increased efficiencies of 1XRTT, 144 kbps data services will require about 8 times as much spectrum as today's 14.4 kbps service.

   We are actively involved in field trials with equipment manufacturers to deploy 1XRTT as soon as commercially viable. It should be noted that the spectral efficiency of 1XRTT is improved if it is employed in "new" spectrum rather than converting existing systems.

3. **Verizon Wireless is aggressively marketing digital service.**

   Verizon Wireless has made considerable progress in moving customers from analog to digital service. For example, over the past 21 months, BAM has converted its analog customers to digital service at a pace of about 5-6% of the total customer base per quarter. As a result, the percentage of analog customers on the BAM network has decreased from more than 80% to about 47%. We are also aggressively marketing digital service to new customers. As a result, more than two thirds of our New York subscribers are now using digital service, more than triple the number in the first quarter of 1999.

   Digital customers are also heavier users. In the first quarter of 2000, digital customers accounted for 78% of BAM network usage during the busy hour. This figure is steadily growing, and, for example, is now at 90% in New York. As these statistics indicate, networks have already been substantially converted to handling digital service. In response to the demand for digital service, Verizon Wireless continues to deploy new digital radio channels where they are needed. In New York, for example, a fifth digital radio channel will be deployed by the end of this year, and a sixth radio channel is planned for 2001.

4. Verizon Wireless must continue to serve a large base of analog customers.

While we are aggressively deploying digital technology throughout our network, more than 13 million of our existing customers (about half of our customer base) continue to use analog phones. In addition, millions of other operators' customers rely on our analog network when they are roaming outside their normal service area. We cannot simply turn off service for these customers.

1. Many customers choose to have analog service. Many analog customers are low volume users, using their phones only in the event of an emergency. They do not see the benefit in buying a new digital phone that they will use infrequently. The improved quality and added features of digital service are also not as important to many of these customers.

2. We must support "roaming" for other operators' customers. We must continue to support a significant number of analog customers who "roam" on our network. Many smaller operators, particularly those in rural markets, have not aggressively deployed digital technology. Thus, the vast majority of their customers use analog. When their customers "roam" into our service area, we must be able to provide them service. Even "all digital" PCS operators utilize analog cellular networks to support roaming.

3. Analog cellular is the only wireless interface available nationwide. It provides an important linkage between disparate digital technologies. For example, through the use of dual mode (analog/digital) phones, analog cellular enables customers who subscribe to TDMA digital service in one part of the country to make calls in another part of the country where TDMA is not available.

4. The FCC's rules require cellular operators to provide analog service. This rule was established when cellular was first developed to promote the interoperability of cellular services across the country. While this rule may not be necessary in a few years, the role of analog cellular continues to be an important one (as outlined above). The FCC's rules also require wireless operators to support 911 emergency calls from any analog phone, including those that are no longer subscribed to a particular operator. As a result, many customers who switch to digital service give their old analog phone to a friend or family member so they can have a phone to use in an emergency. We must continue to provide service for these users.

5. Verizon Wireless' spectrum needs are not solved by digital conversion.

In projecting spectrum needs for the future, Verizon Wireless has already taken into account the fact that the vast majority of its customers will be digital within a few years. However, **the need for more spectrum cannot be satisfied by simply converting all analog customers to digital service or by implementing newer technologies such as 1XRTT**. The need for spectrum is more a function of the marketplace and is driven by several factors.

Increases in wireless penetration. At the end of 1999, it was estimated that approximately 32% of the U.S. population had wireless service, or about 86 million people. Some experts predict that figure to double by 2004. This tremendous increase in the number of wireless customers will be fueled by demand for wireless Internet and data and an ever increasing mobile lifestyle.

Increases in wireless usage. Not only is the number of wireless customers increasing, but each customer is using his/her wireless phone more. Today, an average wireless customer uses about 175 minutes a month (up from 100 just a few years ago). That number is also expected to increase substantially over the next few years.

Increases in demand for spectrum intensive products and services. New wireless data services, such as Internet access, are expected to be in very high demand. These new 3G services will support a variety of high-speed data and multimedia applications that will compete with various landline alternatives. However, even with more spectrally efficient technologies available, these high-speed data services will require substantially more spectrum than current data services.

Figure 1 shows the projected usage of Verizon's cellular network in the New York metropolitan area over the next several years. (Note: Usage is measured in BH CCS, or the number of hundred calls seconds (CCS) during the busiest hour (BH) of the day). Network usage on digital is expected to triple between 2000 and 2004, while analog usage will decline substantially. Importantly, this graphic only includes demand on our network from the continued expected growth of voice services. It does not take into account the enormous growth we expect to see in the demand for 3G and other high-speed data services. Consequently, this graphic helps to illustrate why converting to digital does not obviate the need for more spectrum.

Verizon Wireless, and we believe the wireless industry as a whole, will need substantial additional spectrum in order to meet the demand for wireless services into the future. Without this additional spectrum, Verizon's anticipated usage demand will exceed practical network capacity in many of our more densely populated areas within five years. Moreover, substantial amounts of additional spectrum will be needed to meet the demand for the development of 3G wireless services, especially high-speed data and Internet services.

6. **The proposed legislation to eliminate the "spectrum cap", H.R. 4758, would not promote further consolidation within the industry.**

   In response to questions from the Subcommittee, Mr. Sugrue, Chief of the FCC's Wireless Telecommunications Bureau, indicated that the proposed legislation would promote market consolidation, and thus, would negatively impact wireless competition. Mr. Sugrue's response is perplexing. As he acknowledges, the bill is forward looking only – i.e., it only prohibits the FCC from applying the spectrum cap to any licenses auctioned in the future. Thus, the bill would only affect spectrum that is currently unassigned. It would not promote any further consolidation within the marketplace, by allowing companies to buy out competitors.

   In his written testimony, Mr. Sugrue notes that the wireless industry is very competitive – nearly three quarters of the U.S. population has a choice of five or more competitors. Moreover, in the FCC's recently released fifth annual report on wireless competition, the Wireless Telecommunications Bureau reports that there has been a "rapid rise of digital technology" and "that the average price of mobile telephone service has fallen substantially during the year". Since wireless competition is currently robust and lifting the spectrum cap for future auctions would not promote further consolidation, H.R. 4758 is in the public interest and should be passed.

7. **The "spectrum cap" will impede, not promote, wireless competition.**

   Mr. Sugrue stated that the spectrum cap was still necessary to ensure effective wireless competition. As already stated, the FCC has acknowledged that the wireless industry is robustly competitive. Moreover, lifting the spectrum cap for future auctions of unassigned and unused spectrum would not decrease this competition. The proposed legislation does not eliminate the application of the spectrum cap to secondary market transactions that involve CMRS licenses. However, even if it did, the FCC and the Department of Justice have the authority to review such transactions on a case-by-case basis to ensure that they do not negatively effect competition.

   It should be noted that the spectrum cap would actually decrease wireless competition in the event that some wireless competitors become "capacity-constrained", forcing them to restrict their growth. This would result in fewer choices for consumers and higher prices for 3G services as 3G develops over the longer term. Restrictions on access to spectrum must be eliminated to ensure that competition for 3G and other wireless services continues to flourish.

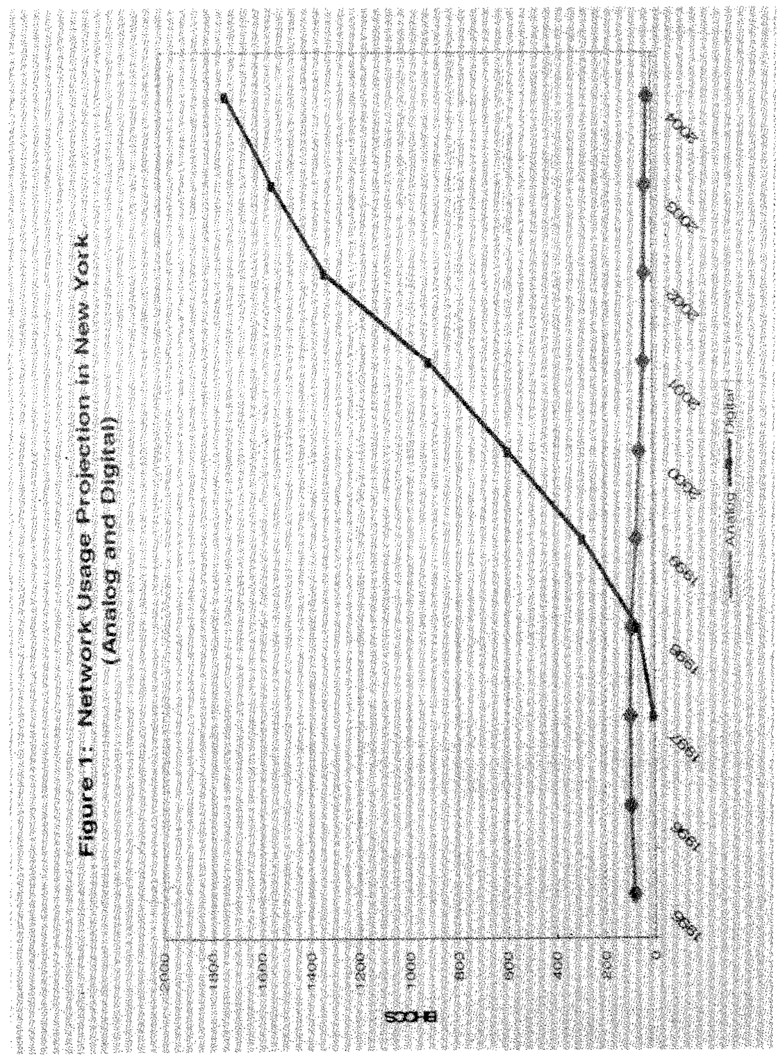


Figure 1: Network Usage Projection in New York
(Analog and Digital)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
Analog
Digital

Federal Communications Commission
Washington, D.C. 20554

July 28, 2000

The Honorable W. J. "Billy" Tauzin
Chairman
Subcommittee on Telecommunications,
Trade, and Consumer Protection
Committee on Commerce
U.S. House of Representatives
2183 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Tauzin:

Pursuant to your request at the Congressional Hearing on Spectrum Management, held on July 19, 2000, I would like to provide information in response to questions raised at the hearing by you and Representatives Gutknecht and Nethercutt. This information is intended to supplement my testimony and the responses that I provided at the hearing. My understanding is that the principal concern is why the Commission did not address Itron's spectrum requirements as part of the Wireless Medical Telemetry proceeding adopted in June of this year and what steps the Commission is now taking to ensure that Itron's spectrum needs are met.

Itron Spectrum License:

Itron was initially licensed on August 15, 1994 to operate automatic meter reading (AMR) systems in the 1427-1429 MHz band on a secondary basis. In 1999, at Itron's request, this license was renewed and expanded to include additional spectrum in the 1429-1432 MHz band. Thus, Itron is currently licensed to operate AMR systems in the 1427-1432 MHz band on a secondary basis. We note that Itron has spectrum options in addition to the 1427-1432 MHz band. First, Itron may operate on spectrum at 216-220 MHz on a secondary basis. Second, upon commencement of the licensing of "for-profit services" in the Multiple Address Systems (MAS) bands, Itron will have an opportunity to apply to operate on twenty channels in the 932/941 MHz MAS band and the 928-959 MHz MAS band on a primary basis.

In addition to the options listed above for Itron's AMR operations, we note that there are additional options for utilities interested in utilizing spectrum for their private internal AMR purposes. When the Commission adopted licensing and service rules for MAS, in December of 1999, the Commission reserved twenty channels in the 932/942 MHz MAS band and the 928/952/956 MHz MAS band for "private internal services". The Commission defined "private internal services" as a service where licensees use their authorized frequencies purely for private internal business purposes or public safety communications and not on a "for-hire" or "for-profit" basis. This spectrum is available immediately to utilities for private internal services. Thus, although Itron's AMR operations do not appear to meet the requirements for use of these bands, utilities interested in using the twenty channels in the 932/941 MAS band and the 928-952/956 MHz MAS band for their private internal AMR purposes may apply for this spectrum.

Spectrum Band Requested by Itron:

On February 29, 2000, Itron filed a petition for rulemaking with the Commission to upgrade the secondary AMR allocation on 1427-1432 MHz to primary status. Consistent with its rules, the Commission placed the petition on public notice in April of this year. The 1427-1432 MHz band was previously allocated for shared use by government and non-government services. The government used this band for a variety of terrestrial military and naval purposes, and for space operations, including telemetry and satellite control. Non-government telemetry services have been permitted to operate in this band on a secondary basis to government operations. These secondary operations were not permitted to cause interference to government operations, and were required to accept any interference received. In response to the Omnibus Budget Reconciliation Act of 1993, the 1427-1432 MHz band was made available for reallocation for exclusive non-government use, effective January 1999. As I stated in my testimony, spectrum in the region below 3 GHz (such as 1427-1432 MHz) is increasingly scarce and in high demand. This demand is driven by rapid growth in traditional, voice, commercial mobile radio services and intense interest in providing advanced data communications services, including Internet access, to a host of portable end user devices.

Wireless Medical Telemetry Proceeding:

The Commission recently allocated the 1429-1432 MHz band for a new wireless medical telemetry service. Medical telemetry equipment is used in hospitals and health care facilities to transmit patient data, such as pulse and respiration rates to a nearby receiver, permitting greater patient mobility and increased comfort. Medical telemetry equipment had been primarily operating on a secondary basis on vacant TV channels and in the private land mobile radio service (PLMRS) bands. However, the introduction of digital television (DTV) and changes to the PLMRS channel spacing are crowding the spectrum where medical telemetry operates, increasing the risk of harmful interference to medical telemetry. An incident of DTV interference to medical telemetry at Baylor University Hospital in 1998 underscored the need for spectrum where medical telemetry could operate without the threat of harmful interference.

The Commission initiated the proceeding with a *Notice of Proposed Rule Making* adopted July 16, 1999. This *Notice* proposed to allocate spectrum where medical telemetry equipment could operate on a primary basis. The *Notice* proposed to allocate three bands for medical telemetry, including the 1429-1432 MHz band. Itron initially filed comments in the medical telemetry proceeding opposing allocation of the 1429-1432 MHz band, stating that medical telemetry equipment in this band could jeopardize continued operation of its meter-reading services. It noted that other comments in this proceeding did not resolve the question of whether medical telemetry equipment could share the 1429-1432 MHz band with meter reading equipment. As previously mentioned, Itron subsequently filed a petition with the Commission to allocate the 1427-1432 MHz band for AMR on a primary basis.

In its *Report and Order*, the Commission allocated three bands on a primary basis to medical telemetry, one of which is 1429-1432 MHz. A total of 14 MHz was allocated to medical telemetry. However, each of the three bands is significantly constrained by incumbent and/or adjacent band operations. As a result, the entire allocation is unlikely to be available in any individual market. The allocation was intended to ensure that at least 6 MHz is available for medical telemetry in all locations, consistent with a needs assessment conducted by the American Hospital Association (AHA).

Prior to adoption of the Wireless Medical Telemetry *Report and Order*, Commission staff met with representatives of Itron and the medical telemetry community and urged them to discuss the future possibility of both services sharing the 1429-1432 MHz band. On June 1, 2000, Itron and the AHA filed a letter with the Commission stating that sharing should be possible in this band. The letter also stated that both parties support the issuance of a *Report and Order* allocating spectrum, including a portion in the 1427-1429 MHz band, to medical telemetry on a primary basis. The letter went on to request that a second Report and Order addressing co-primary status for AMR on this band be initiated expeditiously.

As I noted in my response at the hearing, the Commission's Wireless Medical Telemetry *Report and Order* was fully consistent with the positions expressed in the Itron/AHA letter. The Commission's *Report and Order* stated that the Commission would consider the Itron petition for a frequency allocation in a separate proceeding, along with petitions filed by other parties to operate in the same band. Specifically, the *Order* stated:

> "...both LMCC and Itron have filed petitions for rule making to allocate the 1429-1432 MHz band for other purposes. We find that medical telemetry has an immediate need for new spectrum, and that this band is suitable for medical telemetry. This action does not foreclose LMCC or Itron from obtaining new spectrum allocation. As we stated in our November 1999 *Policy Statement*, the bands 1390-1395 MHz, 1427-1429 MHz and 1432-1435 MHz could be used for land mobile services. In addition, the band 1427-1429 MHz could be used for utility telemetry and it may be possible to share the 1429-1432 MHz band between utility telemetry and medical telemetry. Accordingly, we will consider the LMCC and Itron petitions in separate proceedings." (ET Docket 99-255, Paragraph 22)

Given medical telemetry's immediate need for spectrum, the Commission believed that it was in the public interest to move forward with a primary spectrum allocation for this potentially life critical service. This action in no way precludes a future primary or co-primary allocation for AMR services such as those offered by Itron.

Next Steps:

The Commission is required by the Communications Act and the Administrative Procedures Act to seek public notice and comment when deciding spectrum allocation issues. This requirement is not waived simply because two parties, such as Itron and AHA, have agreed to share particular spectrum. In this instance, competing proposals for this spectrum have been filed by the Land Mobile Communications Council (LMCC), Low Earth Orbiting ("Little Leo") satellite service providers and others. After reviewing the comments, the Commission will consider the needs of all parties involved and allocate spectrum consistent with the public interest.

We remain committed to ensuring adequate spectrum for AMR services. The Commission recognizes the importance and value of utility meter reading systems, particularly for increasing competition among the providers of energy services. As the *Report and Order* on medical telemetry noted, we are currently working on a separate proceeding to address Itron's petition as well as the other service providers who have requested this spectrum. As Chairman Kennard told Congressmen Gutknecht and Nethercutt in a telephone conversation on July 26, 2000, he is committed to scheduling a Notice *of Proposed Rulemaking* on this matter in October of this year.

I trust that this letter full addressees your questions. Please feel free to contact me if you need any further information.

Sincerely,

Dale N. Hatfield
Chief, Office of Engineering and Technology

CC. The Honorable Edward J. Markey
The Honorable Gil Gutknecht
The Honorable George Nethercutt.